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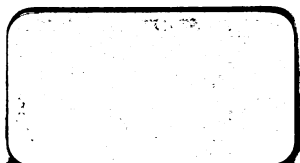
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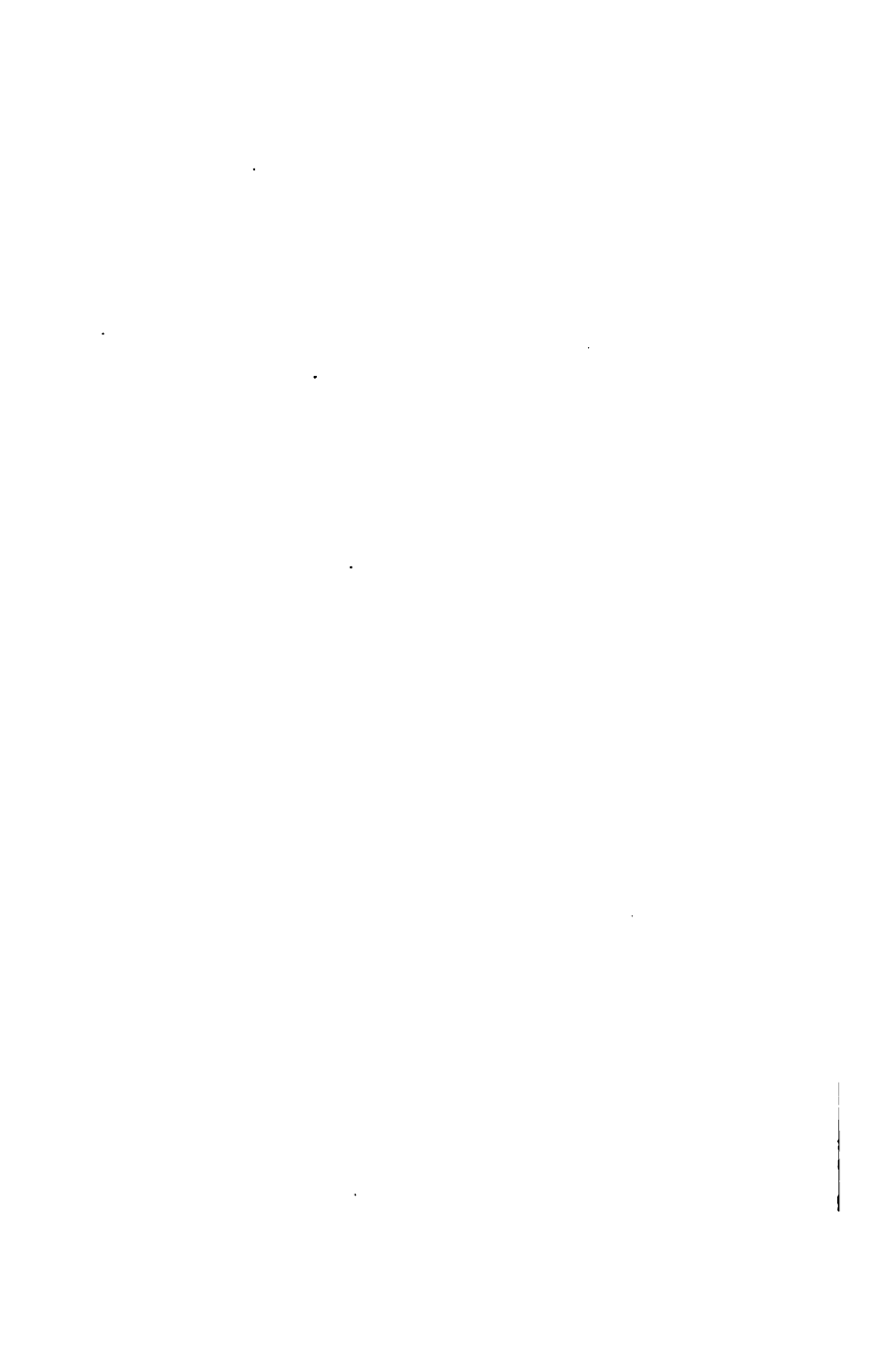
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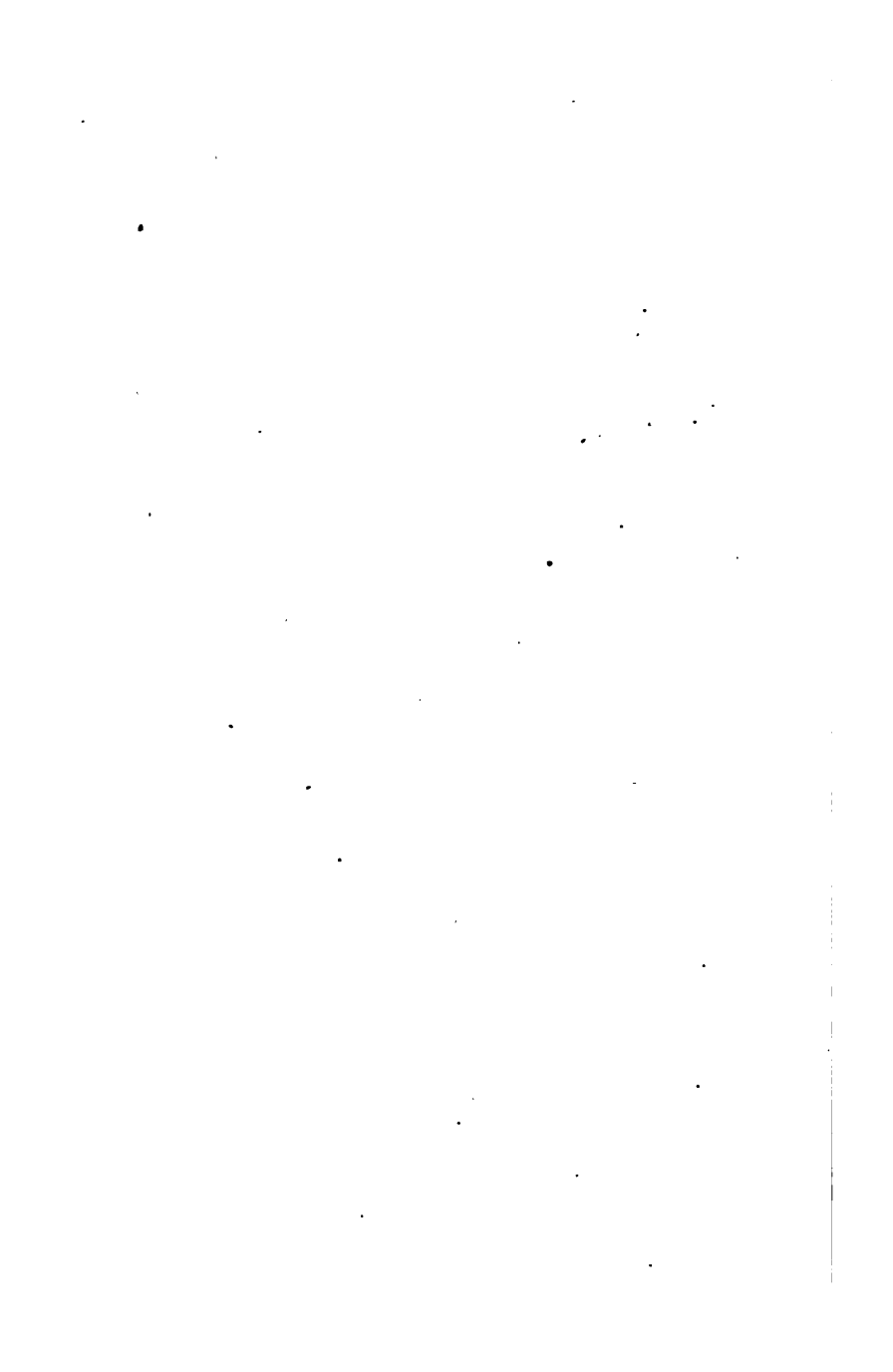
BRITISH SHIPMASTER'S  
HAND BOOK  
TO  
RIO GRANDE DO SUL



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THE  
BRITISH SHIPMASTER'S  
HAND BOOK

TO  
RIO GRANDE DO SUL.

BY  
THE HONORABLE  
HENRY PRENDERGAST VEREKER, LL.D.,  
A RESIDENT AT RIO GRANDE DO SUL.

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## THE BRITISH SHIPMASTER'S HANDBOOK.

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THE coast of Rio Grande do Sul may be assumed to comprise the coast between Cape Santa Martha Grande and Cape Santa Maria, <sup>Coasts,</sup> and for the sake of reference may be divided General. from north to south, as follows:—

Coast of Torres,

Coast of Tramandahy,

Coast of Estreito,

Coast of Albardaõ, and

Coast of Castillos.

It extends upwards of four hundred miles, but throughout its whole length is very similar in character, as far as territorial indications are concerned; the soil is very light, mixed with sand, and in parts consists of pure sand, moving with each wind and subject to continual alterations; the wild fig tree, and some other trees, which never reach any considerable height, grow here and there along the whole coast, sometimes singly, sometimes in groups; and houses, villages, and towns, such as Estreito, may occasionally be seen from a vessel to the northwards of the bar, but in



ordinary weather land marks on the coast (excepting the lighthouse and watch tower of Rio Grande) can only be seen from the deck of a vessel when it is within three miles, or, from the main-top, at about seven miles.

The coast of Torres extends from the Cape of Santa Martha Grande in the north, to a point about sixteen leagues to the southwards, which may be considered to form the northern extremity of the so-called Bay of Tramandahy; on the northern part of this coast the shore is steeper than in any other parts of the Rio Grande coast, until the Castillos shore is reached. At Torres, about eight leagues from the frontier, there is a bay, formed principally by the Rivers Forquilhas and Mambituba; at present this bay is of no avail for shipping, but it has been favorably reported on by engineers as a suitable place for the formation of a harbor, the expense of the necessary works appearing to be the principal impediment to the realization of this project; but, in time, as the Brazilian coasting trade increases in importance, there is very little doubt that this place will be rendered available, if not as a commercial port, at least as a harbor of refuge. At a small distance inland from the town of As Torres (The Towers), two chains of mountains commence, one chain almost west-south-west, lying in the northern part of the province of Rio Grande, and the other going northwards, amalgamates with the mountain

Coast of  
Torres.

forming the highlands of the continental part of the province of Santa Catharina. From the report of the "Emulation," French surveying vessel, it appears that the soundings at four miles to the southwards of Cape Santa Martha Grande are sand, mud, and shells, and that approaching Torres from this spot, the soundings gradually decrease from thirty fathoms to five, in a distance of seventy-five miles, the last-named sounding being close to the land.

The coast of Tramandahy (called in the French charts Pernambuco) may be considered to terminate southwards at the Capão Redondo, or, as it may be appropriately called, the Mostardas headland, the town of Mostardas lying W.N.W., about nine miles; at Tramandahy the coast, proceeding first S.W. and then S.S.E., forms a species of bay Coast of  
Tramandahy. in which small vessels sometimes obtain shelter from continued S.W. winds; at this spot there is also a kind of river, formed by the connexion of several inland lakes, which there overflow into the sea; the soundings at this part of the coast, at five miles' distance, appear to reach about forty fathoms, but proceeding southwards, to Mostardas Point, the soundings at same distance diminish, the proportion of sand found being greater.

A shoal, under the name of Reid's Shoal, is stated to lie opposite the Bay of Tramandahy, in latitude  $31^{\circ} 3' S.$ , longitude  $49^{\circ} 47' W.$ , but the evidence of its existence Reid's Shoal.

Reid's Shoal.

seems very inconclusive ; certainly many persons in the habit of trading along this coast do not believe that there is such a shoal, and it may be mentioned in this place that the British brigantine "Firefly," was wrecked (1859) on the Tramandahy coast, and, according to the statements of the master and crew, the vessel appears to have been lost from a desire to avoid this shoal, by keeping between its alleged position and the coast where the soundings are ample, and without taking account of the currents of which we shall presently treat.

Coast of  
Tramandahy.

The whole coast of Tramandahy, as well as that of Estreito, presents a similar character to that at the south of the Torres coast; the shore portion being a bright white sand, and the interior flat, showing a grassy surface, with occasional small lakes interspersed; wild fig trees, evergreens, grow here and there all along this coast, singly or in clumps, and occasional houses can be seen.

Coast of  
Estreito.

The coast of Estreito extends from the northwards from Mostardas headland or Capaõ Redondo (the latter name being derived from a round thicket close by), to the bar of Rio Grande; it differs from the coasts to the northwards, after passing Torres, in being a very little more elevated, especially midway between the towns of Mostardas and Estreito, there being more trees and more hillocks; the depth of water also diminishes

more slowly according to distance, and more regularly, the soundings also lose much of the small shells found northwards, and consist of mud and sand; the mud, a bluish clay, preponderating as the soundings are more distant from the coast, and *vice versâ*: at about 110 miles from the coast, soundings have been found at 65 fathoms, and at about 60 miles, the soundings may be 40 fathoms. At the extremity of this coast is the light-house of Rio Grande, and the river and bar; but these will be most conveniently treated of after considering the coast to the southwards.

Coast of  
Estreito.

The coast of Albardaõ, which may be assumed to extend from the bar of Rio Grande to the latitude 33° 42' S., or thereabouts, where is the embouchure of the River Chuy, consists of a strip of land, generally narrow, extending between the sea and the Lake Mirim, with some inland lakes lying within the coast; it is usually flat, and almost from the bar of Rio Grande to the Castillos Pequeños, there are said to exist successive shoals, running in a southerly and south-westerly direction, about twenty-four miles from the shore, rendering exact surveys of the coast very difficult; the existence of one large shoal, as marked in the charts, is disproved by the fact, that several vessels of about ten feet draught have come right upon shore along this coast; the

Coast of  
Albardaõ.

Coast of  
Albardaõ.

soundings are exceedingly irregular, and form no index of approach to the land; there appear to be various channels amid the shoals, and leading to land, which are very apt to deceive the mariner, who should take care not unnecessarily to approach this coast. Upon the southern part of this coast the soundings from the "Emulation," showed thirty-two fathoms, sand and mud, and, immediately afterwards, eighteen fathoms, sand and shells.

Coast of  
Castillos.

The Castillos coast is situated in the Oriental Republic of the Uruguay; it is bolder and more varied in character than any of the coasts of which we have been treating, but the interior lands are not so high as at Torres. The first remarkable object from the northward is the Cape of Castillos Pequeños, or the "Small Castles," which runs out sufficiently prominently to the S.E. and N.E.; it is stated to be a rocky headland, with a few isolated and partly submerged rocks about it, and forms the northern extremity of the Castillos Bay; this bay is formed by a curve, the southern extremity of which is the Castillos Grandes, or "Great Castles" headland; the Castillos Bay does not appear to have been regularly surveyed, but is dangerously placed, and is, overlapped by shoals forming part of the Albardaõ shoals already referred to; the bay is, however, stated to have good holding-ground, and to afford shelter from S.W. winds; the channel to enter being round the Castillos

Grandes, nothing but urgent necessity would justify a shipmaster in seeking shelter in this place. Castillos Grandes is the name given, not only to the headland which forms the southern extremity of the bay already mentioned, and the northern boundary of the Bahia Falsa, but more especially to a number of dark-coloured rocks, some of which are very irregular in shape, and being at a little distance from the land are very remarkable objects: the Palmarones Island is more verdant, and more to the southwards, but of this group. From the cape, or headland, of Castillos Grandes, to the Cape of Santa Maria, there is a deep indenture in the coast, more marked on the northern side, which lies at first almost due west, gradually verging to the south; this forms a bay, called the Bahia Falsa (Bay of Deceit), from the circumstance, as it is said, that shipmasters, bound to the River Plate, have occasionally mistaken the Cape Castillos Grandes for the Cape Santa Maria, and, steering as though they had passed the last-named headland, their vessels have been run on shore in this Bahia Falsa, where, somewhat suddenly, the coast turns to the southwards.

Coast of  
Castillos.

Cape Santa Maria forms the extreme northern point of the embouchure of the River Plate, and is surrounded with rocks and small islands; the principal of the latter are the Islands of Paloma and of Tuna, lying to the N.E. of the cape; between these two there

Cape of Santa  
Maria.

is a narrow passage, which leads to a small sheltered anchorage, with soundings of sand, gravel, and small shells, at eleven to fourteen feet; the entry is about midway between the two islands, N.W. by W., and is principally available for small vessels, drawing from nine to eleven feet, and bound to the River Plate, when they desire to avoid an impending S.W. gale.

Coast of  
Castillos.

The configuration of the land of the Castillos coast possesses nothing worthy of special observation; the land is generally higher than that along the northern coasts, after leaving Torres, and increases in height as Cape Santa Maria is approached. Near Castillos Pequeños two roundish hills are seen, and near Santa Maria there is a succession of high hills, some terminating at Maldonado, and others, losing themselves in the interior; there are also found more trees and vegetation than on the northern coast, and white sand is not so prevalent.

Coasts,  
General.

From what has been said, it will be perceived that on the whole coast, from Cape Santa Martha Grande to Cape Santa Maria, there are no objects sufficiently remarkable to guide the mariner, excepting the high lands about the former, the general appearance and islands at the latter, the Castillos rocks and hills near thereto, and, finally, the Lighthouse and Watch Tower of Rio Grande.

The lighthouse, placed at the extremity of the Estreito shore, and to the northwards of

the Rio Grande River, is the principal object which the shipmaster bound to Rio Grande, whether proceeding from Europe or from the River Plate, should endeavor to discover, and to be guided in his course by its position: an exact description, extracted from an official notice given by the Brazilian Government, will therefore probably be acceptable:—"The lighthouse is placed 277 feet, British measure, in a N.E. direction from the position of the old lighthouse referred to in the sailing directions; the position of the latter was calculated by Mr. Dillon, of Her Majesty's steam-vessel "Lizard," to be in latitude  $32^{\circ} 7' 15''$  south, and longitude  $52^{\circ} 4' 25''$  west. The position of the new lighthouse is stated in the official notice above-mentioned to be latitude  $32^{\circ} 7' 3''$  south, longitude  $52^{\circ} 3' 9''$  west of Greenwich. The tower, on which the revolving light is placed, is of iron, the diameter decreasing to the top; the height of this tower, from the level of the land to the top of the cupola, is 101 feet, and from the level of the sea, in ordinary tides, 104 feet; the height, from the level of the sea to the centre of the lights, being 99 feet; the diameter of the base of the tower is 15 feet, and at the top, where the machinery of the light is placed, the diameter is 7 feet 9 inches. The light makes a complete revolution in three minutes, showing at first three reflections of a bright white light; then three

Rio Grande  
Lighthouse.



Rio Grande  
Lighthouse.

Rio Grande  
Lighthouse, &c

somewhat obscured; and, finally, three eclipses. The light, when illuminated with 21 lights with sweet oil, can be seen at a distance of from 25 to 30 miles, according to the state of the atmosphere." It may be added that the lighthouse is at present painted a reddish umber, and in the daytime appears at a distance like a thin blackish column. The watch tower, or old light tower, is square and whitewashed, and is usually perceptible by the naked eye as soon as, or sooner than, the lighthouse; for, though not nearly so high, it is much broader—the red flag, besides, is often flying from the high mast thereon. Other objects, which will be seen at a considerable distance, are the masts of vessels, should there be any at the bar anchorage, and the chapel, a square white building. It should not, however, be supposed that the light is always at its greatest power; shipmasters may therefore be safe in estimating that, when they see the light first from the masthead, in clear weather, that it may lie at a distance of from 18 to 22 miles, and, when from the deck, that the distance may be 10 to 18 miles, taking into calculation the thickness of the atmosphere and the smallness of the light.

Throughout the whole length of the coasts mentioned there is a current, the tendency of which is from north to south. Mr. Dillon computed that, during several months in the

year it was running at the rate of forty miles Currents. per day, when N.E. and E. winds were prevalent; this seems a moderate computation in view of the rapidity with which objects from Cape Frio have found their way to this coast. That the current is wholly regulated by the winds seems to be an error, though it is very possible that a continuance of S. and S.W. winds may check, or even for a time overpower, the natural direction of the current. Shipmasters should take this current in account, as its effect, during or after S.E. or E. winds, is to draw towards the shore those vessels which may have approached too nearly, and from this cause several wrecks are believed to have taken place.

The prevalent winds are the N.E. (from N.N.E. to E.N.E.) and S.W. (from S.S.W. to W.S.W); the former ruling chiefly from November to May, and the latter in June, July, and August; the N.E. winds usually continue three to five days, though sometimes they last with little intermission much longer. They generally commence weakly, and gradually increase in force; they are often rainy, and succeeded by a calm and an atmosphere much charged with electricity. The S.W. winds, on the contrary, are at the first most violent, commencing usually by a sudden gust; they may last very steadily for two or three days, and have much more force, comparatively, than the N.E. winds: they usually

Winds.

Winds.

Winds.

clear the atmosphere. The E. wind occasionally succeeds the N.E., and the S. and S.E. follow the S.W. The due W. wind and W.N.W. are rare, but usually usher in unfavorable weather. The S.E. wind is that most feared by mariners, but is not nearly so prevalent as is generally supposed; the shipmaster should, however, take special care not to be caught by this wind too near the shore, specially on the Albardaõ side, as, combined with the action of the current before mentioned, it becomes very difficult to beat against it. The S.W. (or Pampero) wind, as being very violent and common, deserves a special reference. It may be observed then, that the indications of the approach of the S.W. winds are almost unerring, and can usually be detected from twelve to thirty-six hours before its arrival; as stated, it will occur after a succession of winds from the N.E., and the longer the duration of winds from that direction, the more violent will be the S.W. blast; a calm will usually succeed the N.E. winds, the sky will be cloudy, the atmosphere heavy and charged with electricity, the thermometer will rise, and the barometer fall, and in the horizon from N. to W. a misty atmosphere will appear, in which much lightning will usually show at night, and in the western and south-western horizon dark clouds will gradually rise, accompanied by thunder and lightning, until the

wind comes on in its full force. Several hours before the wind is felt, the water on the bar will rise from the accumulation of the sea between the S.E. banks at the bar and the southern coast, and a ground swell coming from the southwards will be experienced. A Winds. knowledge of the prevailing winds is so interesting in connexion with the trade of Rio Grande, that a compilation, (Appendix No. I) from rough notes taken in a former year, is added in illustration of what has been said on this subject.

In view of the preceding observations referring to the whole coast, from Cape Santa Martha Grande to Cape Santa Maria, the following general rules may be laid down to assist the shipmaster bound to Rio Grande do Sul.

If the vessel should be coming from the General Rules. River Plate it should be kept clear of the Castillos coast, and the Albardaõ coast should not be approached nearer than sixty miles until the latitude  $34^{\circ} 30'$  S. is reached, when the course may, with caution, be gradually altered more to the true north until the Rio Grande Light or Tower is discovered.

If the shipmaster should be proceeding from Europe he will avoid, if possible, to pass to the southward of the  $32^{\circ}$  of south latitude, until he is closely approaching the Rio Grande Bar and is sure of his position. General Rules.

He will adopt this course, not only as the

most direct one, but, because the N.E. winds are the prevailing ones, and, if he should approach the coast, his position, if to the north of the latitude mentioned, will be much more easily ascertainable than on the Albardaõ coast.

General Rules. It is most important on the Rio Grande coasts that the utmost attention should be given to ascertain the latitude and longitude of the vessel's position, as there are few parts of the world where the master must, to the same degree, place his reliance on these computations.

In the event of the vessel's latitude being uncertain, and the land being approached, the soundings will materially assist in determining the position. Whenever the place of the vessel is supposed to be within 120 miles of shore, soundings should be attempted, and repeated every two hours, there being always some tallow, or other adhesive substance, on the lead, so that the nature of the bottom may be ascertained.

Soundings.

The soundings on the approach to the coast are usually assumed to diminish at the rate of about a fathom per mile; there are necessarily many modifications to this rule, and it appears an extreme calculation, which is probably only to be relied on at all on the Estreito coast.

The soundings from eighty fathoms to the shore usually show :

1. Bluish clay or mud with but little sand.
2. Sand and mud.
3. Sand mud and small shells.
4. Sand and shells.
5. Sand.

The "bluish mud" is found at deep bottoms, with shoals at a distance; the "sand and mud" forms the bottoms lying between the extremity of the shoals or shore, and the greater depths; in this bottom is found the safest anchorage and strong holding-ground, at six to ten fathoms. The "sand, mud, and shells," Soundings. forms a good anchorage, but is usually too near the shoals; the "sand and shells" is usually found at the lower side of a bank or shoal, and serves as a signal of danger. When pure sand is drawn up with the lead, the shipmaster may be almost certain that he is close on shore, or on the side of a bank, and should take precautions accordingly.

Many shipmasters endeavour to make the land first to the northwards of the bar; but this appears to be a mistake, as they go out of their proper course to discover an object not so remarkable as the Rio Grande Light-house, to which their views should be principally directed, and subject themselves to dangerous risks by hugging the shore too closely; if, however, from any cause, they should be brought near the Estreito shore, to the north of the bar, they will probably first discover the Mostardas headland,

remarkable by its rounded projection, and by a mass of trees, perceptible a little way from the coast, or the Bujurú Hillock, about mid-way from Mostardas headland to the bar, around which there are many trees and some houses; they will then be safe in keeping along the shore, S.W., in not less than eight fathoms, until they get into latitude  $32^{\circ}$  south, when they can change their course more to the westward, until they sight the lighthouse, attending always to the lead.

General Rule.

Loss of Vessel.

If, through any accident, it becomes necessary to lose the vessel for the sake of preserving the lives of the crew, it seems more prudent for the shipmaster to run for the Bay of Tramandahy, or the southern Estreito shore, than for other parts of the coast, unless he should have a hope of entering Rio Grande or Santa Catharina.

Bars of Rio Grande.

The principal bar of Rio Grande is now (April, 1859) in nearly the same position as when it was surveyed, in 1849, by Mr. Dillon, of Her Majesty's steam-vessel "Lizard;" the chief modifications seem to have been that its central point is now about two-and-a-half cables' length to the westward, and that the extreme point of the south-east bank overlaps it a little more than formerly, having also advanced to the westward; a bank projecting from the south-east bank has been formed inside the bar, making the channel to the bar anchorage somewhat circuitous, and the north-

eastern bar, which, since the closing of the old north-eastern bar, has more or less always existed, has opened more regularly; it cuts through the south-eastern bank, as marked on the charts, at about two-thirds further from the shore than the extreme point of the same bank. There is also a boat channel between the south-western bank and the western shore which is worthy of notice, as it is the most available channel for boats, going or coming, to give assistance to vessels in distress about the south-western bank; and even the pilot boats, when caught to leeward, make for this channel, which has at least four feet of water.

Bars of Rio Grande.

All the banks surrounding the bar are composed of fine sand, and changes are continually recurring, but not to such an extent as is imagined. The north-eastern bar is not at present available for vessels of more than nine feet draught, there being usually, according to the wind, from six to eighteen inches more depth of water on the south south-western bar; to enter the latter the best course appears to be to steer rather south-west (keeping at a distance from the breakers), until the lighthouse bears north by north north-west, and then to steer north north-east by north, and to follow in this course until the bar is fully passed, when the course gradually alters to west by west north-west, until the point of the inner south-eastern

Entrance over Bar.



bank is rounded, when it lies nearly due north to the anchorage. These observations are not intended to regulate the proceedings of shipmasters, but merely to give them a little assistance, by enabling them, with due regard to the changes which may take place in the sand-banks, to judge of the course adopted by the pilots.

S.S.W. Bar.

The south south-western bar is easily distinguished in fine weather by forming, as it were, a gap amid the breakers which appear from the northward to south-westward, and which break with peculiar violence to the west south-west of the bar, on the extremity of the south-western bank, which is steeper than the south-eastern bank; it is, however, to be remarked, that between this south-western bank and the boat channel there is a species of bay, somewhat sheltered, which the master must take special care not to mistake for the bar. The "Guardian" was wrecked in 1855 on the edge of this bay.

Sand-Banks.

It has been observed that the sand-banks, forming, and about the bar, consist of pure fine sand; but, when their position remains unchanged for a sufficient period, the upper part becomes very compact and hard, forming, as it were, an incrustation over the inner part, which is more yielding, very often consisting of quicksands: thus, when a vessel strikes, the effect will be as though it had struck upon a rock, only that the sand-banks

are more elastic; the vessel will often rebound sometimes to a worse position, sometimes passing the impediment (as happens upon the bar), or occasionally being carried back out of danger, as occurred to the "Monarch" in 1856. If the stranded vessel should break through the surface of the bank it will quickly become imbedded in the sands, an accumulation occurring also at the sides from which the breakers are driven back, thus making it often difficult to assist efficiently, or even to approach a vessel in danger; the vessel, if imbedded as above supposed, and laden with a heavy cargo, will usually sink into the sands until it may be said to be swallowed up. A remarkable illustration of this fact was shown in the case of the "Helianthus," laden with coals, wrecked in 1854 on the point of the south-western bank; the weather being unfavorable the vessel could not be approached. The writer, on several occasions, attempted to board the wreck, but found it quite impossible from the causes above-mentioned; the brig was abandoned with ensign flying, and rigging all complete; and each day it could be observed that it had sunk further into the sands, until, finally, the tops of the masts sunk below the level of the sea.

If, unfortunately, a vessel should get aground on the banks, the shipmaster should *immediately* (for every moment's delay is of

Sand-Banks.

Sand-Banks

Rules when  
vessels  
stranded.

Rules when  
vessels  
stranded.

the utmost importance) call for the assistance of the pilotage and steam-tug, and proceed to fix his anchors in the direction in which the vessel is most likely to float off, considering the winds, currents, and channels, and should draw upon these anchors; he should then proceed with all energy to lighten the vessel, according to the principles usually adopted. Many shipmasters, on getting aground, commence by throwing out cargo; but the effect is usually that the vessel, as it becomes lighter, works up higher on the shallows, and vessels have been lost from this cause, which would probably have been saved had the full weight of cargo been retained.

Anchorage  
outside bar.

There are two anchorages outside the bar, one to the south-east, and the other to the south south-west of the lighthouse; the first-named in seven fathoms, and the latter in six fathoms, sand and mud, and good holding-ground. The south south-west anchorage appears preferable, as it gives more opportunities of entering the bar. It is advisable that a shipmaster should be at anchor, if possible, so as to be enabled to observe the signals, and to take the first opportunity of entering. Sometimes vessels have to remain outside the bar from want of water thereon, or unfavorable winds, for a considerable time; but in neither of these anchorages ought the anchor to remain too long in the same place, as it is apt to sink into the sands,

which renders the raising of it on an emergency difficult ; every two or three days the anchors should be weighed, and again cast, and the shipmaster should be prepared to buoy his anchor efficiently, in the event, from any cause, of finding a necessity to let it slip. Anchorages outside bar.

It may be observed in this place, that many vessels have struck, and several have been lost, by attempting to enter the bar from a north-easterly direction, thus getting on the extremity of the south-east bank ; this should be avoided. Point of S.E. bank.

As soon as the shipmaster comes fully in sight of the Rio Grande Lighthouse, he should hoist the signals of the draught of water of his vessel ; for this purpose he should be provided with a red flag, a blue flag, a white flag, and a blue birgee or pennant ; these signals should be hoisted on the foretop gallant mast-head, or on the fore-royal mast-head, and the shipmaster should take care in hoisting them, that the main, or fore-gallant, or royal sails, do not in any manner interfere with the full view of his signals from the signal tower ; he should use signals somewhat larger than those usually employed as Marryatt's signals, and, according to the wind, he should place the signal flags at a sufficient distance one from the other, so that each flag may be distinctly seen from the tower, and he should avoid the use of Marryatt's signals, Signals of draught.

as No. 1, and the second distinguishing pennant, lead to confusion from the mixture of colours, and No. 5, may lead to the opinion that pennants are hoisted, or that the tug steamer is required.

Table of  
Signals.

In judging of the signals which may be hoisted for draught of water, the shipmaster should be guided strictly by the signals in the table (Appendix II) annexed, which, though differing from tables formerly published, has been carefully framed upon information communicated by responsible officers of the Brazilian Government.

The following observations are attached to the Brazilian table of signals, and may at the risk of repetition be inserted here :

Brazilian  
directions.

“Table of signals of palms of water (long since adopted at the bar of Rio Grande), which will be exhibited on the smaller mast of the watch-tower, to indicate to the vessels desiring to enter the port, the depth of water which there may be on the said bar, in conjunction with the calling signal ; and which the vessels, which enter or proceed outwards, should hoist on the fore-mast to show their draught of water in palms. For those vessels which are about to proceed outwards, the same signals have to be made on a mast placed near the bridge or wharf of the pilotage.

“The calling signal will continue by means of the red flag, hoisted on the top of the large mast of the watch tower, and will be always

made when the bar is practicable; but it should be understood, that those vessels alone are called, whose draught of water may be equal to or less than that indicated on the same occasion by the signal displayed on the smaller mast of the same watch tower.

“When, for want of a favorable wind, the entries or exits of vessels can only take place under towage, a white two-pointed or swallow-tailed flag, with red points, shall be hoisted above the signals of the palms of water. These signals shall be also hoisted on the pilot boat which may be on the bank. Brazilian directions.

“As soon as the signals are lowered from the watch tower, or pilot boat on the bank, it should be understood on board the vessels that now they cannot enter, and they should immediately be turned seawards.” Brazilian directions.

The signals being hoisted and the position of his vessel determined, the shipmaster should steer for the lighthouse in the manner already explained, making allowance for his position, and for winds and currents. Upon approaching, he will distinguish first the signals on the signal tower near the lighthouse, or on the pilot-boat lying within the bar; if he should see the calling signal, a red flag, hoisted on the higher mast of the signal tower at the bar, and if there should be no other vessels in the offing, he may confidently approach until he gets sight of the pilot boat inside the bar; but, if there should Rules for entering.

Rules for  
entering.

be any other vessels about to enter, he should ascertain, before going too forward, the signals of draught of water hoisted on the lower mast of the signal tower ; should these show a draught of water, equal or superior to that of the vessel, the shipmaster may usually confidently direct his course to the pilot boat at the bar ; if the draught of water exhibited on the tower should be less than that required by the vessel, or if the calling signal should be hauled down, the shipmaster should immediately move away from the coast, and anchor, or tack off and on, until a more favorable opportunity offers ; in all these manœuvres he should keep wide of the breakers, so as to give himself full power, when called on, to move towards the bar, or otherwise, as may be most convenient.

Rules for  
entering.

The pilot boat station is a short way inside the bar, and the course to enter should be at first directly towards this boat ; when approaching, it will be perceived that the signals of the depth of water on the bar are hoisted thereon, and the master, when he perceives these signals, should be guided thereby, rather than by the signals on the tower, as the latter are derived from the former ; a moveable red flag will also be observed on the pilot boat, this must on no account be mistaken for a calling signal, but is intended merely to guide the course of vessels entering ; when moved to the west or the east, &c.,

it means that the vessel should alter its course in those directions; when held perpendicularly, it means that the vessel should proceed directly in the wake of the pilot boat. There is occasionally another pilot boat stationed in the inlet between the bar and the entrance to the anchorage, which makes signals in the same manner as the first, with a moveable red flag, but without the signals of depth of water; if the second boat should be in its station, the shipmaster will be guided by its signals, immediately after passing the first pilot boat; but, if it should not be there, he may act according to the signals of the first pilot boat; and, if neither of the pilot boats should appear, and the calling signal continues to fly, he should then act wholly on the signals from the tower, from which there might then be thrown out red flags to point out the direction, as on the pilot boats, though this is no part of the service, and would only be done on extraordinary occasions.

Rules for  
entering.

A literal translation of the Brazilian regulations for the pilotage at the bar, is annexed hereto (Appendix III); as also a table of the telegraphic signals used to communicate with vessels outside the bar (Appendix IV); the earnest attention of the shipmaster is requested to these documents, which, on the subjects of which they treat, are ample for his guidance.

Pilotage  
regulations.

Telegraphic  
signals to com-  
municate with  
vessels.



Table of soundings.

To load only to 11 feet.

Telegraph with Rio Grande.

A table is also added (Appendix V) showing the soundings on the bar upon various occasions, taken from rough notes in 1857 and 1859, in those months when the trade is most active. It may be presumed generally, that vessels bound to Rio Grande should not load deeper than eleven feet; for though vessels with twelve and a half feet may occasionally enter, these chances are very uncertain, and, by the difference of half a foot, a vessel may be prevented from entering or going out for several weeks; it does not appear on the average, that the freight receivable from the increased loading nearly compensates for the loss by detention; according to calculations made the result seems to be quite the contrary.

There is a telegraph arranged by flags between the village at the bar, and the town of Rio Grande, by which the community may know daily the vessels coming in or going out, or those lying off the bar, and other occurrences. The signals are exhibited on corresponding flag-staffs, one placed near the wharf, in front of the lighthouse, called the pilotage wharf; the second, about midway between that point and Rio Grande city, on the west side of the river; and the third on the theatre of Rio Grande. The shipmaster about to enter must take no notice of the signals made on the mast near the pilotage wharf, as they are intended either for the

vessels about to go out, or for the telegraph, but it is well that he should know of the existence of this telegraph, as it may enable him, through means of the pilotage, to communicate with his consul or consignee.

The port of Rio Grande do Sul may be considered to be comprised in the water space from the bar on the south, to the western extremity of the town of Rio Grande, on the north-west, and to the northern extreme of the town of São José do Norte, on the north-east; the distance from the bar to each of the last-mentioned points being about ten miles. Within this space there are four principal anchorages; 1st, that of the bar, about due-west of the lighthouse, where all vessels remain after having entered until they have been visited, &c.; 2ndly, that of the buoy (a large red buoy, placed at the head of the channels which go respectively to Rio Grande and to São José), where vessels bound to Rio Grande, which have a wind suited to come up the river, but not to take the course to the southern town, usually anchor, waiting for a favorable wind, or for a tug steamer; 3rdly, that of São José do Norte; and, 4thly, that of Rio Grande do Sul. Vessels are not allowed to anchor between the bar and the extreme point of the coast, which lies to the north-east thereof, unless on extraordinary occasions; this space is called the Lagomar. The vessels entering are expected to anchor

Port of Rio Grande.

Inner anchorages.

Inner  
anchorage.

as nearly as may be due-west of the light-house, where there is good holding-ground, five to seven fathoms, sand and mud. The anchorage at the buoy is in from two-and-a-half to five fathoms, the mud rather preponderates, and the anchors occasionally drag. The anchorage of São José do Norte is excellent, sand with some mud, from five to seven fathoms; it is well sheltered from all prevalent winds, excepting the S.W., and capable of accommodating a very large number of vessels. The anchorage of Rio Grande do Sul is sheltered from all prevalent winds excepting the N.E.; the anchorage is not as firm as those previously mentioned, the mud being predominant, and consequently vessels occasionally drag on their anchors. The channel from the bar anchorage to that of São José do Norte is very regular, bounded east and west by sandy shoals, land, and small hillocks, and only diversified by the Mangueira, or Armlet—a shallow bay, which runs inwards some distance almost due-west of the regular channel, at nearly two-thirds distance up the channel;—its entrance is about three-quarters of a mile wide, and at the southern point is situated the telegraph flag-staff, which corresponds with that at Rio Grande do Sul.

Course up  
channel.

In going up the channel, the shipmaster may calculate that the depth of water is almost always in proportion to the height of

the bordering coast; he will therefore prefer to keep near the higher coast; his direction from the bar anchorage will be about north north-west by north, keeping near the western shore until he rounds a shallow which runs out on the eastern side, and upon approaching the southern point of the Mangueira, before-mentioned, he will verge towards the north north-east until he reaches the Buoy, or São José, anchorages. Course up channel.

The course to Rio Grande do Sul is somewhat more difficult, as the channel, or canal, as it is called, is very narrow, and partly circuitous, consisting almost wholly of soft mud at about nine feet depth in centre. Great caution is required in attempting this channel; for though it is not likely that the vessel will be strained, as it might be in the other anchorages, if it should get aground, yet, should this happen when the water is high, the vessel may be delayed for weeks before it is freed. The course for a vessel, after leaving the red buoy, is south south-west, to avoid a bank of sand which runs to the south south-east, near the buoy, and to the westward thereof; on rounding the point of this shoal the course lies north north-west, gradually moving to west and west south-west, until the shipping and town of Rio Grande are near, when the vessel should be guided near the south coast, so as to pass between the yachts, which lie next the shore, Course to Rio Grande.

Anchorage at  
Rio Grande.

and the outer tier of vessels, where there is an open road specially left clear for vessels entering; the anchor should then be cast as near the Custom-House as may be, until the vessel is discharged, when it will take its appointed position; the average depth of the anchorage is nearly three fathoms. The vessels in the anchorage of Rio Grande do Sul being usually very numerous, are ranged in tiers along the coast, east and west, the Brazilian vessels being to the westward of the Custom-House wharf, and the British and foreign vessels to the eastward, so that every vessel should have room to swing round its anchor without touching another vessel.\* The most difficult part of the channel to the anchorage of Rio Grande do Sul is the turn round the shallow, called the Masêga, after passing its extreme point, as the channel is narrower than in other parts, and turns sharply, the course lying near the shore. The chart of the port, prepared by Mr. Dillon, of Her Majesty's steam-vessel "Lizard," appears sufficiently accurate for practical purposes; but the depth of water, both on the bar, and along the channel to Rio Grande do Sul, is usually at present (1859) somewhat more than that marked in the chart.

Course to Rio  
Grande.

In the anchorage of São José do Norte the rules with regard to mooring anchors are

\* When the vessels are much crowded, they are moored by head and stern, so as to prevent collisions.

not so strict as at Rio Grande do Sul, as the anchorage is much larger, and the number of vessels going there less numerous. Shipmasters may generally select their own anchorage at São José; but with the condition that there should be full room on every side to swing round the anchor. If a vessel, with regard to which this condition is neglected, should come into collision with another, the shipmaster who has neglected the rule will have to pay the damages caused. Mooring.

Technically speaking, the port of Rio Grande do Sul is the anchorage in front of Rio Grande do Sul, and the port of São José do Norte is likewise the anchorage fronting São José do Norte; the vessel is considered to have arrived in the port when the anchor is cast in whatever anchorage the vessel is to commence to discharge. When arrived.

The ports of Rio Grande do Sul and of São José do Norte are quite distinct, and for many years had separate Custom-Houses and separate administrations. It would be well that shipowners, merchants, or others, when preparing charter parties, &c., for Rio Grande, should hold in view the distinction between the two ports; the terms "Rio Grande do Norte" and "Rio Grande North," should never be used to designate the town or anchorage of São José do Norte, as such terms could not be properly recognized, and regularly would apply to Rio Grande do

Distinction  
between Rio  
Grande and  
São José.

Distinction  
between Rio  
Grande and  
São José.

Norte, which is a province of Brazil situated in 5° to 6° latitude S. By a decree of the Brazilian Government, in 1858, the Custom-House of São José do Norte has merged in that of Rio Grande do Sul, a collectoria, or establishment for the collection of taxes, being left at São José. Vessels with cargoes consisting wholly of salt or coals, are allowed to continue to discharge all their cargoes in the anchorage of São José do Norte, which is much better than the southern anchorage; but vessels with general cargoes are required to discharge at the south (Rio Grande), being allowed to unload a sufficient portion of their cargo at the São José anchorage to lighten their draught, so that they may come through the shallow channel to the south, the cargo thus discharged being immediately brought over to Rio Grande in lighters. Bone-ash and ballast are usually completely laden at São José; and thereat, as the deeper anchorage, most British vessels complete their cargoes of hides or other merchandize. The channel to the south will usually admit vessels of nine feet draught; the anchorage at the north is suited to any vessels which can pass the bar, and is of the average depth of six fathoms.

Pilots, when  
necessary.

Shipmasters coming up the river for the first time, and always, when moving their vessels from São José to Rio Grande, or *vice versa*, would do well to have a pilot on board, as the expense is not large, and they may

save difficulty and responsibility ; when Pilots, when coming to the bar for the first time, it may necessary. also be useful to call for a pilot ; if any doubt exists about the power to enter, this is done by hoisting the signals of draught of water above the flag of the vessel's nation, on the fore-top gallant-mast.

In order that the shipmaster may judge of his proceedings in port, extracts of those parts of the port regulations which may principally affect him, are added hereto (Appendix VI). Port Regulations.

It appears advisable that the manner in which should be defrayed the expense of towage, up or down the river, or from São José to Rio Grande, or *vice versa*, and of lighterage, should be specifically provided for in the charter-party, as also the commission to be paid to the merchant on inward and outward freight, and the anchorage in which the vessel, if laden with salt or coals, should remain. Charter Parties. It might also be proper to insert a clause that general average and demurrage claims should be settled in England, as shipmasters, even in the most manifest cases, find great difficulty in recovering such claims at Rio Grande, and the delays and expenses of Brazilian laws are so great, that they would probably derive no satisfaction from having recourse to litigation in Brazil.

The merchants of Rio Grande have framed a set of rules, which they style "The Custom



**Merchants'  
Rules.**

of the Port," and is annexed (Appendix VII); but these rules can only be considered to have been made by the merchants for their own convenience and to avoid disputes, and necessarily will not bind the shipmaster when they may be in contradiction to the charter party; if, however, there should be nothing in the charter party against it, the merchants will insist on these rules being carried out.

**Commissions.**

It will be perceived by the above-mentioned rules, that a commission of five per centum is demanded on the ship's disbursements; this is generally taken to mean all sums paid on account of the shipmaster, even though the consignee should be owing for freight at the time. If the shipmaster wishes to avoid this charge, he should make a specific agreement with the consignee, or receive his freight, and pay his own bills; but, generally, it would be well that these matters were provided for by the charter party.

**Salt Cargoes.**

Salt is received in the port of Rio Grande by measure, the measures used being half alqueire measures, or larger measures at master's option; each alqueire is assumed to contain eighty pounds, Brazilian weight, of salt (equal to 80.95 British); sometimes the weight is less and sometimes more, and as vessels are usually freighted to be paid by ton weight delivered, the shipmaster will probably judge right to ascertain the average

weight of the measures of salt he delivers. He is allowed by the Custom-House a margin of ten per centum, over or under the cargo manifested; but if the amount delivered should pass this limit either way, he becomes subject to a fine, unless on proof of damage by stress of weather.

The average exchange at Rio Grande is about two shillings and twopence per milrea, or half dollar, assuming the American gold ounce to be worth sixteen dollars, and the United States gold and silver dollars to be worth par; but payments to public departments, and for towage, are usually made in Brazilian money, which is (1859) worth about four per centum premium over the ordinary currency. The consular fees are one pound and seven shillings, for services attending entry and clearance; the noting a protest is five shillings, and the bill of health, ten shillings; for extra services, the shipmaster will be guided by the table of fees affixed in the consul's office. Exchanges, Consuls' Fees, &c.

The rules laid down for vessels about to enter Rio Grande port, apply in part to those preparing to leave, but the signals to be observed are differently placed; the signals for vessels to go out are the depth of water in palms, hoisted on the mast close to the pilotage wharf, which thus invite all vessels having the draught indicated, or a lesser draught. The signals on the tower should Rules for leaving Port.

Rules for  
leaving Port.

only be observed to ascertain, by the indication on the smaller mast of the tower, the depth of water on the bar; and whenever this depth approaches to that required for a vessel ready to sail, its draught of water should be hoisted on that vessel in the manner already explained, and retained whilst there is any probability of its being able to proceed to sea. The red flag on the tower only refers to vessels outside the bar. All vessels at the bar anchorage about to go outwards should be ready to sail on the shortest notice, as a delay of a quarter of an hour, coupled with the time required to proceed from the bar anchorage to the bar, may often for weeks deprive a vessel of the chance of going out; for the same reason shipmasters, who wish to sail, should not leave their vessels at the bar to proceed to either of the towns, excepting through urgent necessity.

General Observation.

The best time, for entering the port, may be just preceding a S.W. wind, or immediately after it is over, as the N.E. wind commences: for going out, on the eve of the S.W. wind, or as it is commencing; generally the water is highest at a very early hour in the morning, and the bar at the same time more practicable. The desire of the pilots to assist vessels appears to be proved by the vast number of vessels which, when crossing the bar, touch, without receiving further injury: the supposition entertained by some

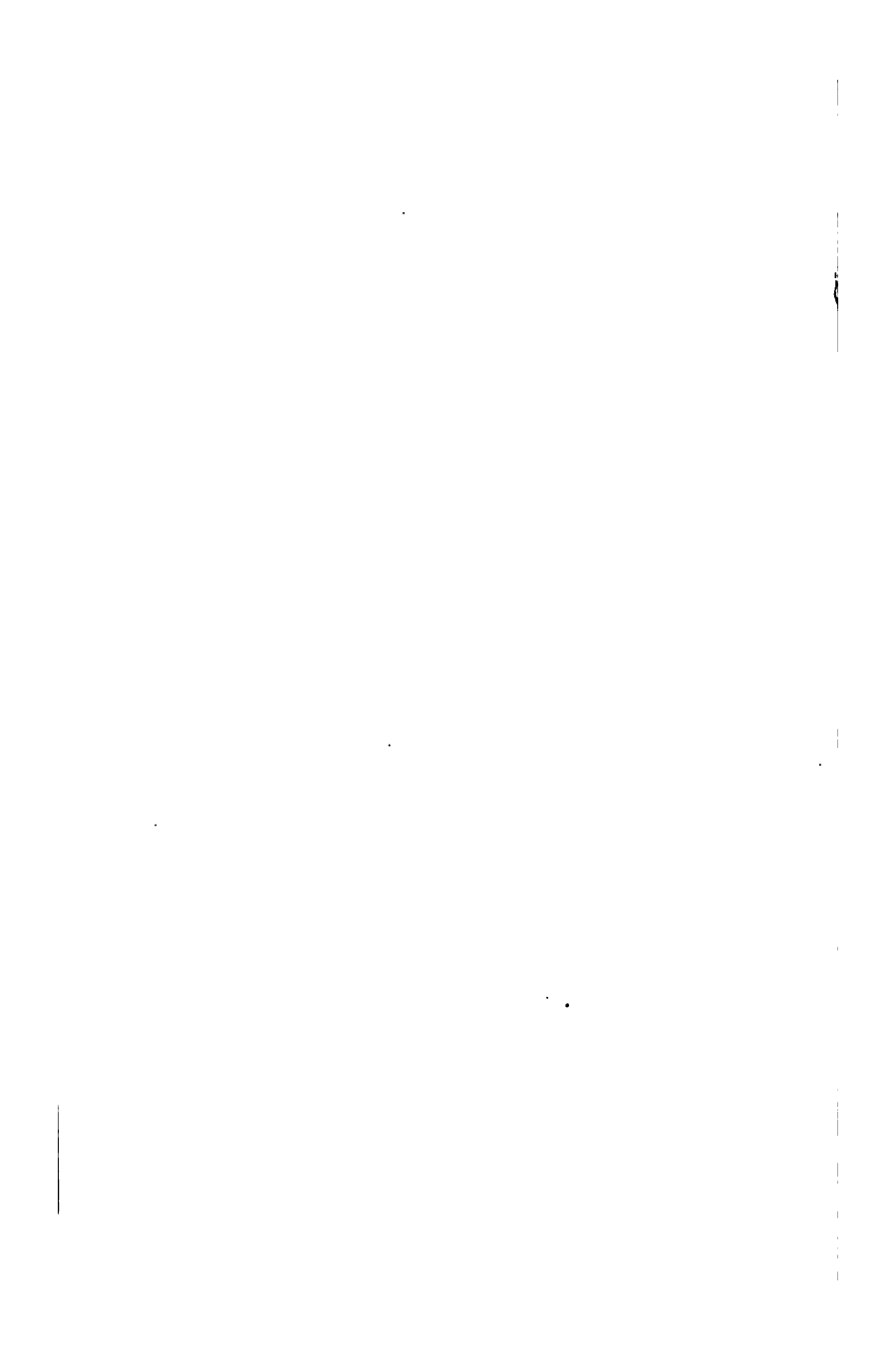
that the pilots wilfully lead a vessel out of the channel to mystify the bar, seems to be, to say the least, exceedingly improbable, though it is very possible that the pilots may occasionally fail to ascertain the deepest channel.

From São José do Norte anchorage there is an easily understood channel to Porto Alegre, through the Lake Patos, partly defined by buoys and partly by beacons, the principal difficulty is at the southern entrance of the lake, where there is a shallow bank or bar; but usually vessels with nine feet draught may conveniently perform the voyage. The trade of Porto Alegre is yearly increasing, and many Brazilian, and some foreign, vessels, go to that port: as a matter of course, any British shipmaster, proceeding up the lake, would take a pilot.

Porto Alegre  
Channel and  
Trade.

It is hoped the foregoing observations may prove useful to British shipmasters, and others interested in the commerce of Rio Grande do Sul, and that they may assist, even though in a very small degree, in promoting that commerce.

Conclusion.



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**APPENDICES.**

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# APPENDIX No. I.

**TABLE of Weather and Winds at Rio Grande do Sul, extracted from rough Notes taken by the Honorable H. Prendergast Vereker, in 1853 and 1854.**

N.B.—The range of thermometer is reckoned from the average of three Fahrenheit's thermometers, all placed in the shade, and in rooms but little exposed to the action of the Sun. The term NE is taken to mean generally all winds from NNE to ENE, and the term SW all winds from WSW to SSW.

Date.	Range of Thermometer at following hours :			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Jan. 1	75	77	...	NE, strong ...	Clear and fine.
" 2	77	77	...	NE, strong ...	Clear and fine.
" 3	78	78	2 p.m. 80	NE, strong ...	Fine, a few clouds.
" 4	79	75	...	Calm, at night SW	Sky overclouded.
" 5	72	70	...	SE, fresh ...	Clear and fine.
" 6	69½	70	...	SE ...	" "
" 7	74	75	...	NE, strong ...	" "
" 8	75	71	...	SW, increasing ...	Much rain at night, with Pampero.
" 9	69	68	...	SE ...	Clear and fine.
" 10	69	71	...	SW, latter part calm	Clouds.
" 11	73	74	...	NE, strong ...	" "
" 12	73	75	...	NE ...	Much rain.
" 13	74	71	...	NE, calm, SW ...	Sky overclouded, slight showers, light Pampero in evening.
" 14	68	67	...	SW, slight ...	Clear and fine.
" 15	67	69	...	NE, slight ...	" "
" 16	71	74	...	N, fresh ...	" "
" 17	75½	81½	...	NW, strong ...	" "
" 18	75	71	...	S, very fresh ...	" "
" 19	69	71	...	Calm ...	" "
" 20	71	70	...	S ...	Fine and clear.
" 21	71	73	...	S, SSE ...	" "
" 22	73	75	...	NE, strong ...	Rising clouds.
" 23	76	77	...	NE, strong ...	Sky overcast.
" 24	77	74	...	NE, then E, strong	" "
" 25	77	74	...	N, then SW ...	Strong Pampero.
" 26	73½	75	...	SW, then S ...	" "
" 27	73	69	...	SW, fresh ...	Fine and clear.



Date.	Range of Thermometer at following hours:			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Jan. 28	69	74	...	N ... ..	Cloudy. Some rain. Clear.
" 29	75	77	...	N, and N N W ...	
" 30	77	80	...	Calm ... ..	
" 31	79	75	...	Calm ... ..	
Feb. 1	72	69	7 a.m. 75	S W ... ..	
" 2	69	72	2 p.m. 73	N, then W ... ..	Strong Pampero.
" 3	73	78	3 p.m. 79	N ... ..	
" 4	78	82	{ 11 a.m. 80 }	E N E ... ..	
" 5	82	81	{ 2 p.m. 83 }	N ... ..	
" 6	82	82	3 p.m. 85	N E ... ..	
" 7	83	82	2 p.m. 87	N E ... ..	
" 8	82	80	3 a.m. 83	S W ... ..	
" 9	77	74	{ 2 a.m. 80 }	S E, fresh ... ..	
" 10	75	75	{ 2 p.m. 77 }	E ... ..	
" 11	76	73	...	S E, then S ... ..	
" 12	73	73	2 p.m. 74	S W ... ..	
" 13	73	74	...	S ... ..	
" 14	72	74	...	S E ... ..	
" 15	75	74	2 p.m. 77	E ... ..	
" 16	74	76	2 p.m. 77	N E ... ..	
" 17	77	78	2 p.m. 80½	N E ... ..	
" 18	79½	81	3 p.m. 83	N E ... ..	
" 19	82	83	2 p.m. 86	E, then N E ... ..	
" 20	83	85½	{ 1 a.m. 83 }	N E ... ..	
" 21	84	78	{ 4 p.m. 87½ }	N E ... ..	
" 22	76	71	{ midnight 86 }	N, then S W ...	
" 23	73	70	2 p.m. 85	S W, strong gale ...	
" 24	70	70	2 p.m. 74	S W, then S ...	
" 25	73	72	2 p.m. 73	SE ... ..	
" 26	71	72	7 a.m. 70	SE ... ..	
" 27	71	73	...	Calm ... ..	
" 28	73	74	3 p.m. 74	E, then S E ... ..	
March 1	74	74	...	E, fresh ... ..	
" 2	75	75	...	E ... ..	Rainy. Rainy. Various showers. Rainy.
" 3	75	75	...	N E ... ..	
" 4	75	74	2 p.m. 77	N E and E ... ..	
" 5	75	75	...	N E, then S E ...	
" 6	75	75	...	N E, then S ... ..	
" 7	75	75	...	S ... ..	
" 8	73	74	...	Changeable ... ..	
" 9	74	75	...	S ... ..	
" 10	75	78	3 p.m. 78½	S, then N W ... ..	
" 11	78	80	3 p.m. 80	Calm ... ..	
" 12	78	76	...	S W ... ..	
" 13	74	76	...	S, then N W ... ..	
" 14	77	78	3 p.m. 80	N E ... ..	

Date.	Range of Thermometer at following hours:			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Mar. 15	78	80	3 & 11 p.m. 81	NE ... ..	
" 16	79	76	...	SW, strong ...	Much rain.
" 17	69	67	3 p.m. 69	SW ... ..	
" 18	67	68	...	S, then E ...	
" 19	68	69	...	E, then NNE ...	Rainy.
" 20	70	69	...	NE ... ..	"
" 21	70	71	2 p.m. 71	NE ... ..	Cloudy.
" 22	71	72	2 p.m. 73	NE ... ..	
" 23	73	73	2 p.m. 74	SW, slight ...	
" 24	71	70	...	SW, and S ...	
" 25	68	70	2 p.m. 71	SW ... ..	
" 26	71	73	...	NE, then SW ...	
" 27	73	73	...	SE, and ENE ...	
" 28	72	75	3 a.m. 73	NE ... ..	
" 29	74	73	...	NE ... ..	
" 30	71	71	...	SE ... ..	
" 31	71	74	...	E ... ..	
April 1	73	72	...	S ... ..	Fine.
" 2	73	73	...	NE ... ..	Cloudless sky.
" 3	73	71	...	SW ... ..	Fine and clear.
" 4	73	75	...	Variable ...	
" 5	74	73	...	Variable ...	Cloudy sky."
" 6	71	73	2 p.m. 73	Variable, slight ...	
" 7	74	75	2 p.m. 76	NE ... ..	
" 8	73	73	3 p.m. 74	NE ... ..	A few clouds.
" 9	74	74	...	NE ... ..	Clear sky.
" 10	75	76	3 p.m. 77	E ... ..	Thunder storm from
" 11	74	74	2 p.m. 75	SW, slight ...	SW in evening.
" 12	67	64	9 a.m. 72	SW, steady, Pampero	
" 13	60	62	3 p.m. 62	SW ... ..	
" 14	59	62	3 p.m. 63	W ... ..	
" 15	60	61	3 p.m. 62	SW ... ..	
" 16 to 20	...	...	...	...	No account taken.
" 21	67	68	...	E, very slight ...	Cloudless sky.
" 22	69	69	2 p.m. 70	NE ... ..	
" 23	69	71	{ 2 p.m. 71 12 night, 71 }	NE ... ..	Clouds.
" 24	71	67	...	S, then SW ...	Fine clear sky.
" 25	66	69	...	SW, and NE ...	
" 26	71	76	2 p.m. 76	Changeable ...	Clouds. "
" 27	71	67	...	S ... ..	Very cloudy.
" 28	68	65	2 p.m. 67	Calm ... ..	
" 29	64	62	...	SW ... ..	Fine clear weather.
" 30	63	63	...	S, slight ...	Fine clear weather.
May 1	64	64	...	S ... ..	A comet, direction WSW.
" 2	63	63	...	SW ... ..	Cloudless.
" 3	60	59	...	SW ... ..	Fine and clear.
" 4	58	59	3 p.m. 60	SW ... ..	

Date.	Range of Thermometer at following hours :			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
May 5	58	60	...	S W ... ..	Fine.
" 6	58	61	2 p.m. 62	Calm ... ..	"
" 7	60	65	...	N E ... ..	No rain.
" 8	67	67	...	N N E ... ..	"
" 9	67	68	...	N E ... ..	"
" 10	67	67	...	N E, slight ... ..	"
" 11	68	68	3 p.m. 69	E ... ..	"
" 12	70	70	3 p.m. 70	E ... ..	"
" 13	69	70	{ 11 a.m. 72 3 p.m. 70 }	Changeable ... ..	Cloudy.
" 14	71½	71	midnight, 71	Changeable ... ..	"
" 15	71	71	2 p.m. 73	N E, and N N E ... ..	"
" 16	71	70	...	E, stiff breeze ... ..	Rainy.
" 17	70	69	2 p.m. 70	N W ... ..	Much rain.
" 18	66	69	2 p.m. 65	S W ... ..	Clear weather.
" 19	62	63	...	S W ... ..	"
" 20	64	65	...	S, and S E ... ..	"
" 21	67	66	...	N E ... ..	"
" 22	68	67	...	N E ... ..	No rain.
" 23	67	67	...	N ... ..	"
" 24	68	66	...	N E ... ..	A slight shower.
" 25	67	66	...	Calm ... ..	"
" 26	65	67	2 p.m. 68	N ... ..	"
" 27	67	68	...	N ... ..	Fine.
" 28	67	68½	...	N ... ..	"
" 29	62	62	2 p.m. 62	S W ... ..	Thunder at night.
" 30	58	60	...	S W ... ..	Fine clear weather.
" 31	59½	59	7 a.m. 57½	S W ... ..	"
June 1	57	59	...	N W, then N ... ..	No rain.
" 2	60	61	...	Calm ... ..	"
" 3	61	62	2 p.m. 62	S W ... ..	"
" 4	61	64	...	W, N W, N ... ..	Fine weather.
" 5	64	66	...	N E ... ..	"
" 6	65	69	...	Calm ... ..	Heavy atmosphere.
" 7	68	71	2 p.m. 72	N, slight ... ..	"
" 8	68½	69	...	Variable ... ..	No rain.
" 9	69	69	...	Variable ... ..	"
" 10	69	70	...	N E ... ..	"
" 11	68	67	2 p.m. 66	S W ... ..	"
" 12	66	64	...	S ... ..	"
" 13	66	64	...	S W, fresh ... ..	"
" 14	60	59	...	S W ... ..	Fine.
" 15	60	62	7 a.m. 50	N ... ..	"
" 16	62	64	9 a.m. 61	N E ... ..	No rain, but clouds.
" 17	63	65	...	N E ... ..	Rainy.
" 18	64	63	...	E ... ..	"
" 19	63	62	2 p.m. 62	N ... ..	"
" 20	61	58	2 p.m. 60½	S W ... ..	Morning wet, evening fine
" 21	52	54½	2 p.m. 53	S W ... ..	Fine.
" 22	54	58	2 p.m. 58	N E ... ..	"

Date.	Range of Thermometer at following hours :			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
June 23	58	58	...	N E... ..	Fine.
" 24	59	58	...	N E... ..	Cloudy.
" 25	59	60	...	N E, slight ...	Foggy.
" 26	61	63	...	N E... ..	Foggy morning, evening fine.
" 27	63	63	...	N E... ..	Rain till midday, & cloudy
" 28	63	64	2 p.m. 64	N E... ..	Cloudy.
" 29	63	64	...	N E, brisk ...	Fine weather.
" 30	65	68	...	N E, gale ...	"
July 1	68	70	...	N ... ..	"
" 2	66	65	...	S ... ..	Clouds, but no rain.
" 3	64	61	...	S E... ..	Heavy rain.
" 4	61	60	...	N E... ..	Clear weather.
" 5	61	63	...	N E... ..	"
" 6	63	63	...	N, then calm ...	Rain in afternoon.
" 7	63	62	...	S W... ..	Clear weather.
" 8	63	61	...	S W... ..	"
" 9	61	65	...	N W... ..	No rain.
" 10	61	56	...	S W, gale from 2 p.m.	"
" 11	52	54	2 p.m. 55	W ... ..	"
" 12	53	53	3 p.m. 54	S W... ..	"
" 13	53	54	...	S W, slight, then calm	No rain.
" 14	54	58	...	Calm ... ..	"
" 15	59	60	...	N E... ..	"
" 16	60	63	...	N E... ..	"
" 17	63	61	...	Variable ... ..	Rainy.
" 18	61	61	...	N E... ..	Sky overcast.
" 19	62	61	...	N E... ..	"
" 20	63	64	...	N E... ..	"
" 21	63	63	...	N E... ..	"
" 22	63	61	...	S W, slight ...	Thick misty weather.
" 23	61	62	...	S W... ..	"
" 24	63	64	...	N E, and S ...	"
" 25	64	66	...	N E... ..	Clearer, but cloudy.
" 26	65	58	2 p.m. 59	S W... ..	At 1 a.m. violent thunder storm.
" 27	57	55	...	S W, fresh ...	Fine weather.
" 28	54	57	...	N E... ..	"
" 29	58	60	...	N E & S, both slight	"
" 30	60	60	...	S, slight ...	Cloudy sky.
" 31	58	58	...	S, slight ...	"
Aug. 1	59	60	...	N E... ..	Passing clouds.
" 2	61	61	...	Calm ... ..	Heavy clouds and rain.
" 3	63	63	...	N E, then S W	Rain till Pampero.
" 4	58	56	...	S W, violent gale ...	Cloudy sky.
" 5	54	55	...	S W... ..	Some rain.
" 6	51	47	10 a.m. 44	S W... ..	Therm. exposed to wind, 42
" 7	44	47	10 a.m. 42	S W... ..	" " 40
" 8	46	47	2 p.m. 48	S W... ..	"
" 9	47	51	...	S ... ..	Clear weather.

Date.	Range of Thermometer at following hours :			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Aug. 10	52	54½	...	SE ...	Thick fog, but no rain.
" 11	58½	56	...	Calm	No rain.
" 12	57	56	...	Variable	" Cloudy.
" 13	58	57	...	Variable	Fine.
" 14	56	60	...	E, stiff breeze	Cloudy.
" 15	60	59	...	NE ...	Thunder and rain at night
" 16	58	58	...	N ...	No rain.
" 17	59	58	...	Calm	"
" 18	58	60	...	NE ...	A fog in evening.
" 19	58	59	...	Variable	Foggy.
" 20	60	62	...	Calm	Clouds, but no rain.
" 21	60	60	...	NE ...	Much rain.
" 22	60	59	...	E, brisk	Rain.
" 23	59	59	...	E ...	"
" 24	59	58	...	E, slight	Heavy sky.
" 25	58	58	...	Calm	"
" 26	55	54	...	SW ...	Clear.
" 27	55	55½	...	Calm	"
" 28	57	58	...	Calm, then E	Passing clouds in eveng.
" 29	59	61	...	NE ...	No rain.
" 30	61	64	...	NE ...	Cloudy
" 31	63	66	...	Changeable	"
Sept. 1	63	64	...	Changeable	"
" 2	63	63	...	NE ...	"
" 3	63	62	...	Variable	Foggy, then rainy.
" 4	62	62	...	Variable	"
" 5	59	59	...	Variable	No rain.
" 6	60	64	...	N, and NE	Sky overcharged.
" 7	63	63	...	S ...	Rainy.
" 8	60	59	3 p.m. 58	Variable	Cloudy.
" 9	58	56	2 p.m. 57	S ...	"
" 10	58	57	...	NE, strong	Rainy.
" 11	57	57	...	NE, strong	"
" 12	58	58	...	Variable	Showers.
" 13	59	60	...	SE, then calm	Clear sky.
" 14	61	60	...	NE, slight	"
" 15	61	61	...	E ...	"
" 16	62	64	...	NE ...	Clear weather.
" 17	64	66	...	NE ...	"
" 18	62½	60	...	S ...	Sky overcast with clouds.
" 19	60	61	...	NE ...	"
" 20	60	60	4 p.m. 60	S ...	"
" 21	62	64	...	NE ...	"
" 22	64	67	...	NE ...	"
" 23	65	65	...	Calm	Heavy rain.
" 24	64	64	...	S ...	"
" 25	64	64	...	SW ...	Fine clear weather.
" 26	64	64½	...	NE ...	"
" 27	64	65	...	N, then SW	Weather stormy.
" 28	63	63	...	SW ...	Heavy rain.

Date.	Range of Thermometer at following hours:			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Sept. 29	63	64	...	S W, slight, and calm	Clear sky.
" 30	65	64½	...	N E ...	"
Oct. 1	66	68	...	N E ...	"
" 2	69	69	...	S ...	"
" 3	68	68	...	Calm ...	Cloudy, much electricity
" 4	69	69	...	Calm ...	No rain.
" 5	70	67	...	S ...	Cloudy.
" 6	67	66	...	S ...	Heavy passing clouds.
" 7	65	64	...	N E ...	Much rain.
" 8	63	63	...	E ...	Rainy.
" 9	63	64	...	E ...	Sky overcast.
" 10	64	66	...	N E, slight ...	Cloudy.
" 11	65	65	3 p.m. 67	S, slight ...	Passing clouds.
" 12	65	64	...	E, slight ...	Clear sky.
" 13	66	67	...	N E ...	"
" 14	67	69	...	N E ...	Evening cloudy.
" 15	68	69	...	N E, then E ...	Heavy clouds.
" 16	68	68	...	E, strong gale ...	"
" 17	68	68	...	E ...	Rainy.
" 18	65	64	...	S E, strong ...	Showers.
" 19	63	63	3 p.m. 63	S W ...	Cloudy.
" 20	61	61	6 p.m. 63	S ...	"
" 21	61	62	...	N E ...	Fine clear weather.
" 22	63	64	...	Calm ...	"
" 23	65	67	...	Calm ...	"
" 24	67	63	7 p.m. 66	S W ...	Rain in morning.
" 25	61½	63	...	S ...	Fine clear weather.
" 26	64	67	...	Calm ...	Slight fog.
" 27	67	67	...	N E, slight ...	Fine weather.
" 28	67	68	...	N E, strong breeze...	"
" 29	70	73	3 p.m. 73	Variable ...	Fine but cloudy.
" 30	73	70	2 p.m. 74	S E, then E, strong	Changeable.
" 31	69	67	...	E, strong ...	Cloudy.
Nov. 1	66	68	...	N E ...	Heavy clouds and rain.
" 2	67	70	...	N E ...	Cloudy.
" 3	70	69	...	S W ...	Fine clear sky.
" 4	68½	69	...	N E ...	"
" 5	69	73	3 p.m. 72½	N E ...	Passing clouds.
" 6	74	75½	3 p.m. 77	S E ...	"
" 7	75	74	...	N E ...	Thunder storm in aftern.
" 8	73	73	...	N E ...	Cloudy and showery.
" 9	69	68	...	Calm, then N E	"
" 10	68	70	...	N N E ...	"
" 11	71	71	...	N E, then S W	Thunder storm, then Pampero.
" 12	68	70	...	S W ...	Fine and clear.
" 13	70	73	...	S ...	"
" 14	73	77	...	W S W ...	No rain.
" 15	75	75	2 p.m. 77	N E ...	"
" 16	75	75	...	N E, then S W	Thunder storm, then Pampero.

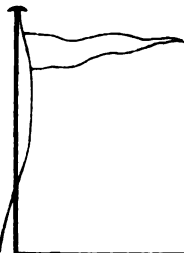
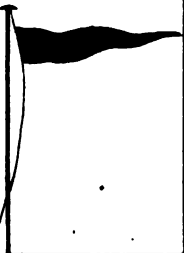
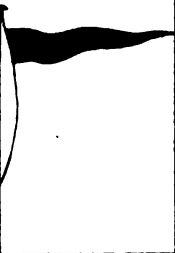
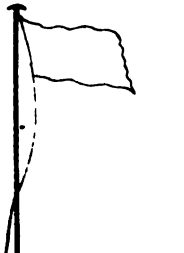
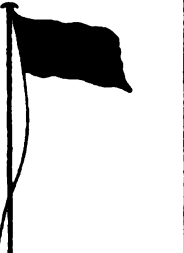

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Date.	Range of Thermometer at following hours :			Prevailing Winds.	REMARKS.
	At 10 A.M.	At 10 P.M.	At other hours as marked.		
Nov. 17	74	74	...	N ... ..	Cloudy.
" 18	72	78	...	SE ... ..	"
" 19	73	71	...	E ... ..	Rainy.
" 20	70	70	...	SW ... ..	"
" 21	71	70	...	SW ... ..	Fine weather.
" 22	70	72	...	E ... ..	" "
" 23	74	74	...	Calm ... ..	" "
" 24	75	76	...	NE ... ..	" "
" 25	75	74	...	NE, increasing	" "
" 26	75	76	...	NE, strong	" "
" 27	77	78	2 p.m. 79	Variable ... ..	Rain at noon.
" 28	78	77	2 p.m. 79	E, steady ... ..	No rain.
" 29	77	74½	...	E, then S ... ..	Cloudy.
" 30	75	79	...	NE ... ..	No rain.
Dec. 1	76	77	...	N ... ..	"
" 2	79	78	...	NE ... ..	"
" 3	78	77	...	NE ... ..	"
" 4	77	76	...	E, then S, strong	Violent thunder-storm and hail.
" 5	69	67½	2 p.m. 68½	SW, then calm	"
" 6	68	71	...	NE, strong	"
" 7	74	75	...	NE ... ..	Clouds round horizon.
" 8	74	72	...	S ... ..	Fine clear sky.
" 9	72	71	...	S and SE ... ..	" "
" 10	72	73	...	NE ... ..	"
" 11	74	76	...	Calm ... ..	Sky overcast.
" 12	76	75	...	SE ... ..	Few clouds.
" 13	75	74	...	NE ... ..	Fine.
" 14	75	76	...	NE ... ..	"
" 15	76	77	...	N ... ..	"
" 16	78	77	...	NE, then SE	No rain.
" 17	79	79	2 p.m. 80½	S ... ..	"
" 18	75	78	2 p.m. 74	Variable ... ..	No rain.
" 19	72	71	2 p.m. 73	Calm, ... ..	Cloudy.
" 20	71	71	...	NE ... ..	Rainy.
" 21	70	73	...	NE, then calm	Showers.
" 22	73	73	...	S ... ..	Fine clear sky.
" 23	73	75½	...	SE ... ..	" "
" 24	73	71	...	SW ... ..	" "
" 25	71	71	...	E, and calm	" "
" 26	72	77	2 p.m. 77	NE ... ..	" "
" 27	78	71½	...	SW, violent gusts...	Clouds heavy in SW and NE
" 28	69	70	...	SW, steady gale	Fine clear weather.
" 29	70	69	...	NE ... ..	Passing clouds.
" 30	75	74	...	N ... ..	Clouds, but no rain.
" 31	75	75	...	Calm ... ..	" "



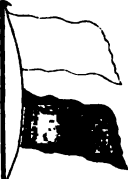






## APPENDIX No. II.

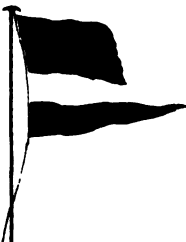


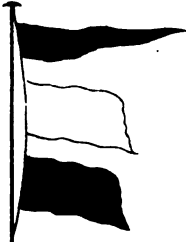
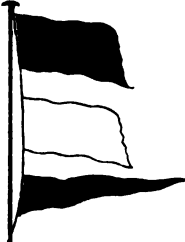
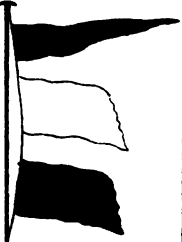

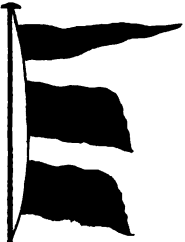
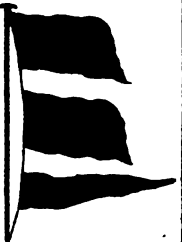
SIGNALS to be hoisted as directed to indicate the depth of  
Water on the Bar of Rio Grande do Sul and the actual  
draught of Vessels.

N.B.—The Brazilian Palms designated, and also the exact equivalents in  
English feet and inches, are placed immediately UNDER each Signal.

 <p><i>7 Palms — 5 feet 1 1/4 inches</i></p>	 <p><i>8 Palms — 5 feet 10 inches</i></p>	 <p><i>9 Palms — 6 feet 6 1/4 inches</i></p>
 <p><i>10 Palms — 7 feet 3 1/2 inches</i></p>	 <p><i>10 1/2 Palms — 7 feet 7 1/2 inches</i></p>	 <p><i>11 Palms — 8 feet 0 1/4 inches</i></p>



		
<p><i>11 1/2 Palms — 8 feet 4 1/4 inches</i></p>	<p><i>12 Palms — 8 feet 9 inches.</i></p>	<p><i>12 1/2 Palms — 9 feet 1 1/2 inches.</i></p>
		
<p><i>13 Palms — 9 feet 5 1/4 inches.</i></p>	<p><i>13 1/2 Palms — 9 feet 10 1/2 inches</i></p>	<p><i>14 Palms — 10 feet 2 1/2 inches</i></p>
		
<p><i>14 1/2 Palms — 10 feet 6 1/2 inches</i></p>	<p><i>15 Palms — 10 feet 11 1/4 inches</i></p>	<p><i>15 1/2 Palms — 11 feet 3 1/2 inches</i></p>

		
<p>16 Palms — 11 feet 8 inches</p>	<p>16 ½ Palms — 12 feet 0 ¾ inches</p>	<p>17 Palms — 12 feet 4 ¼ inches</p>
		
<p>17 ½ Palms — 12 feet 9 ½ inches</p>	<p>18 Palms — 13 feet 1 ½ inches</p>	<p>18 ½ Palms — 13 feet 5 ¾ inches</p>
		
<p>19 Palms — 13 feet 10 ¼ inches</p>	<p>19 ½ Palms — 14 feet 2 ¾ inches</p>	<p>20 Palms — 14 feet 7 inches</p>



## APPENDIX No. III.

(TRANSLATION.)

### REGULATION FOR THE PILOTAGE OF THE BAR OF THE PROVINCE OF SAÕ PEDRO OF RIO GRANDE DO SUL.

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#### CHAPTER I.

##### *Of the Individuals composing the Pilotage.*

ARTICLE I.—The Pilotage of the Bar of the Province of Saõ Pedro of Rio Grande do Sul is charged with aiding and directing the entry and exit of Brazilian and Foreign Merchant Vessels or Ships of War, and with affording succor to those which may be in danger near the same Bar.

The administration and direction of the Pilotage will, under the inspection of the Captain of the Port, be entrusted to an Officer of the Brazilian Navy.

ART. 2.—For the service of Pilotage there shall be three first-class Pilots, three second-class, and four apprentice Pilots or third-class Pilots.

The first-class Pilots shall be nominated by the President of the Province from those of the second-class who may have shown the greatest aptitude and zeal for the service, and who shall have been in the execution of their duties in this class for at least two years. Similarly, the second-class Pilots shall be nominated by the President of the Province from those of

the third-class Pilots who have been for at least six years in maritime service, including three as third-class Pilots, Masters, or Seamen attached to the Pilotage, they being previously examined and approved in the presence of the Captain of the Port, not only in reference to the method of pilotage outside and inside of the Bar, to the currents, tides, and prevailing winds, but also in regard to the working and management of the vessel in all the varied circumstances of the Bar and adjoining coasts.

The third-class Pilots should be Brazilian denizens, above twenty-one years of age, and for at least four years in maritime service. They shall be admitted upon the simple nomination of the Captain of the Port, after previous examination and approbation in what relates to the sand-banks and channels of the Bar and its neighbourhood, to tides and currents, and to the principal ideas of navigation, and working and mooring vessels ; a preference being given, under like circumstances, to those who could serve or had served as Masters or Seamen of the Pilot-Boats, or on board of Merchant Vessels engaged in the commerce of the Province, or who may know either the English, French, or German languages. In default of third-class Pilots the Masters or Seamen of Pilot-Boats will be allowed, under the same conditions, to compete for the employment of second-class Pilots.

In the examination of Candidates for the place of second or third-class Pilot the provisions of the Regulation of 28th of February, 1854, for the Pilotage of the Province of Pernambuco shall, as far as applicable, be observed.

ART. 3.—The first and second-class Pilots shall not be dismissed, excepting by the President of the Province after a detailed statement from the Officer controlling the Pilotage, addressed through means of the Captain of the Port, who will inform by his report.

ART. 4.—For the crews and service of the Pilot-Boats there shall be four Masters, thirty first-class and six second-class Seamen, all engaged by the Controller of the Pilotage ; a note

of them being taken in the Captaincy of the Port, with explanations of their features, signs, and parentage.

ART. 5.—There shall be besides the following Employés :—

1st. A Secretary, for all the writing relative to the service and accounts of the Pilotage.

2nd. Two Light-house Guards, for the service and preservation of the Light-house at the Bar.

3rd. Two Watchmen for the Watch tower or Signal tower.

4th. A Carpenter, for the small works and repairs of the Pilot-Boats and Tow Steamers, and also for the buildings of the establishment.

ART. 6.—The Secretary shall be appointed by the President of the Province, upon the recommendation of the Captain of the Port ; the Light-house Guards, Watchmen, and Carpenter shall be admitted or engaged by the said Captain of the Port, upon the proposal of the Controller of the Pilotage, who shall also control the Light-house.

In the event of the Secretary being unable to act, one of the second or third-class Pilots, nominated by the Controller of the Pilotage, with the approval of the Captain of the Port, will temporarily perform the duties of the place.

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## CHAPTER II.

### *Of the Materials required.*

ART. 7.—The materials for the use of the Pilotage, besides the Steamers destined for towing, shall be as follows :—

1st. Three copper-fastened Pilot-Boats, each with two sails, twelve oars, a kedge anchor with chain cable, another with hawser, a compass, a table of signals of depth of water in palms (*Appendix, No. II*), a sounding rod, a lead for sounding, and eight buckets.

2nd. A copper-fastened Long-Boat, constructed especially

to resist a breaking sea, and capable of being used for mooring and raising an anchor of twelve quintals weight, (1,554 *lbs. British*); with twelve oars, two sails, and a small anchor and chain.

- 3rd. A Life-Boat of modern construction, to aid shipwrecked persons; with sufficient room to receive twenty-four or thirty persons (besides its crew), with appropriate appurtenances; and also six circular Life-buoys.
- 4th. A Whale-Boat, or good Ship's-Boat, for eight to ten oars, suited to resist the currents, and on occasions of calm, to proceed to the bank in the place of the Pilot-Boats.
- 5th. A small Boat for the registration of vessels, and remaining service inside the Port.
- 6th. Four Anchors, each weighing from six to ten quintals (777 *lbs. to* 1,295 *lbs., British*), and the four chain cables to correspond.
- 7th. Two good spy glasses, and a set of signals of bunting, for the watch tower, including three or four blue balls (*balloons*).
- 8th. Two small anchors, two tow ropes, six masts, six sails, six yards, and forty oars, as extras.

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### CHAPTER III.\*

#### *Of the Income and Expenditure of the Pilotage.*

ART. 8.—The tax which is established under the name of "Tonnage" is raised to seven hundred and eighty reis per ton, (the entry and exit of each vessel being therein comprehended), the Pilotage being obliged to tow vessels when necessary with-

\* The articles in reference to tonnage dues and towage have been modified by a contract, to commence 18th March, 1860. See Appendix No. VIII.

out any further remuneration. In towage a preference shall be given for entering to the vessels of deeper draught of water, and for going out to those which have been for the longest time at anchor in the Mangueira anchorage, attention being always paid to the number of palms of water which there may be on the Bar, and to the state of the sea.

ART. 9.—The payment or indemnification for any extraordinary service, and for assistance rendered by the Pilotage to vessels in danger, shall be valued by the Controller of the Pilotage, in accordance with the importance and quality of such assistance, and with the damage or losses which on the occasion the materials employed may have suffered; the valuation being subject to the approval of the Captain of the Port, who shall have the power, when there are reclamations on the part of those interested, to modify it according to justice.

ART. 10.—These payments, and those of the Tonnage Dues, shall be effected in the Custom House of the city of Rio Grande, in that of São José do Norte, or in that of Porto Alegre, according to the anchorage to which the vessel may be destined, and in view of the accounts which the Pilotage shall transmit to the respective Custom Houses, through the Captaincy of the Port. When, however, the assistance of which the previous Article treats has been afforded on the occasion of the vessel's going out, the Controller of the Pilotage shall levy its amount, and transmit it to the competent Custom House. In the aforesaid Custom House there shall be given to the parties a docket, or regular acknowledgment, of the sums which they may thus pay in, not only in virtue of the Tonnage Dues, but also for the indemnification of the succours, or extraordinary assistance, rendered by the Pilotage.—It being essential that this acknowledgment should be presented with the other clearance papers of the vessel on the occasion of its going out.

ART. 11.—When it should happen that any vessel which has entered the port in safety does not again go out—or that, having been newly constructed or fitted, it should have to go



outside the Bar for the first time—it will be subject to the payment only of one-half of Tonnage Dues, or three hundred and sixty reis per ton.

ART. 12.—There shall be in the department of the Pilotage, besides the Register Books of Correspondence and Accounts, six books, to be opened, closed, and signed by the Captain of the Port; that is to say, two, to note the vessels entering and going out, with a declaration of the names of the Captain or Master, and of the Owner, or Consignee, the number of tons according to their respective measurement, the place whence coming, &c.; one, for an entry of all the persons attached to the Pilotage; one, in which should be noted the materials and other objects belonging, or furnished, to the said Pilotage; one, for the entry or discharge of all the materials spent or regularly consumed in the service; and finally, one, for the registration therein of the circumstances of the loss or getting aground of any vessel, and of other extraordinary occurrences.

ART. 13.—The expenses which may be incurred with the persons attached to the Pilotage, and materials, and with the tow steamers, will be paid by the competent Department, on view of the accounts authorized by the Captaincy of the Port, and in a manner analogous to that established in reference to vessels of war.

ART. 14.—One of the first or second-class Pilots, chosen every two years by the Controlling Officer on his responsibility, will have the charge of all the materials belonging to the establishment; provided that no Pilot should a second time undertake this charge without having been for two years at least effectively in the regular service of the Pilotage: whenever he should be succeeded by another he shall present his accounts to the Captaincy of the Port.

ART. 15.—The Pilot in charge of the materials will, jointly with the respective Secretary, sign in the suitable books all entries of charge and discharge of materials, and these shall also receive the signature of the Controlling Officer.

ART. 16.—Every expense, or employment of goods, incurred by the Pilotage department shall be, as a condition precedent, by order in writing of the Controlling Officer; the which shall be entered in the suitable book, with a declaration of the object to which applicable.

ART. 17.—The discharge of objects or goods which may be lost in the service, or damaged in the storehouses, can only be done by the authorization of the President of the Province, in view of a detailed communication from the Controlling Officer, addressed through the Captaincy of the Port, or by official declaration of their consumption, signed by the Controlling Officer, the Secretary, and the person in charge of the materials.

ART. 18.—Such declarations of consumption shall not be made unless after the objects or goods damaged, or in bad condition, have been examined, with the assistance of the Captain of the Port, and immediately afterwards they shall be destroyed; or, if they should still possess any value, be ordered to be sold by public auction, and the amount which may be obtained for them paid into the Custom House at Rio Grande.

ART. 19.—In January and June of each year the Controller of the Pilotage will transmit to the Captaincy of the Port a balance, showing all the materials and goods existing, with a declaration of the condition of each article. The Captain of the Port will cause the said balance to be compared with the entries in the books of charge and discharge, in order to the taking of the accounts, in fitting time, from the Pilot in charge, who will be responsible, or in his place the Controlling Officer, for the deficiencies which perchance may be discovered. The Captain of the Port, through the Presidency, will communicate what may occur in this respect to the Secretary of State for Naval Affairs, transmitting, besides, every six months to the same Secretary, a balance of the expense incurred each six months with the persons attached to the Pilotage, and with materials, including the expenses of the tow boats.

## CHAPTER IV.

*Of the Salaries of the Officer in charge of the Pilotage and of the other Employés.*

ART. 20.—The Officer controlling the Pilotage will have monthly the gratuity which he now receives of one hundred and eighty milreis, besides the simple pay of his official rank.

ART. 21.—The other Employés of the Pilotage will receive monthly the following pay :—

- 1st. The Secretary, eighty milreis.
- 2nd. Each first-class Pilot, one hundred and thirty milreis.
- 3rd. Each second-class Pilot, ninety milreis.
- 4th. Each third-class Pilot, sixty milreis.
- 5th. The Carpenter, sixty milreis.
- 6th. Each Light-house Guard, fifty-five milreis.
- 7th. Each Watchman, fifty milreis.
- 8th. Each Master of a Pilot-Boat or other Boat, sixty milreis.
- 9th. Each first-class Seaman, forty-five milreis.
- 10th. Each second-class Seaman, thirty-five milreis.

## CHAPTER V.\*

*Of the Tow Steamers.*

ART. 22.—The Steamers which the Government may destine to the special service of towing at Rio Grande Bar shall be commanded by Officers of the Navy, junior to or of lesser rank than the Officer controlling the Pilotage, whom they will obey in all referring to the employment and service of the said steamers.

The senior or higher in rank of the Commanders will take the place of the Controller of the Pilotage when he may be prevented from acting.

\* See Appendix No. VIII.

ART. 23.—They will tow those vessels which, according to the circumstances of the Bar, may not be able to go out or come in under sail, up to and even beyond the bank, for such distance as may be convenient, in accordance with the provisions of the last part of the 8th Article of this Regulation, and they will afford the succour which may be necessary to vessels in danger.

ART. 24.—In each Steamer there shall be a Secretary and a person in charge, an Officer over seamen, one or two engineers, four fire-men, two coal trimmers, a cook, four first-class and two second-class seamen, and two servants.

ART. 25.—The Tow Steamers shall never go outside the Bar without having on board a Pilot from the Pilotage Department, which shall also furnish the seamen which occasionally may be required for any extraordinary service.

ART. 26.—The respective Commanders, subject to the financial superintendence and inspection of the Captain of the Port, have charge of the discipline, police, and economical management of these vessels, in conformity with the rules of the provisional Regulation.

ART. 27.—The receipts, expenditure, and writing of the said Steamers shall be regulated in the form prescribed for Vessels of the Navy.

ART. 28.—The applications for goods, and the reports of payment of crews, shall be presented to the Captain of the Port, and be duly forwarded.

ART. 29.—The earnings and rations of all the men of the Tow Steamers shall be discounted according to the tables in force for Vessels of War.

ART. 30.—On board of each Steamer there shall be a special book in which shall be entered, day by day, the names and tonnage of the vessels which it has towed; and not only this book, but the others for the writing connected with the said Steamer, shall be signed by the Captain of the Port.

## CHAPTER VI.

*Of the Discipline and Service of the Pilotage.*

ART. 31.—The Employés of the Pilotage during the time they remain in that service are considered as belonging to the War Marine, and, as such, subject to the regulations and discipline of the Navy.

ART. 32.—The Captain of the Port is the principal person responsible for the execution of this Regulation, and, as such, he will, whenever it may be convenient, examine if the Controlling Officer and other Employés of the Pilotage comply exactly with their duties, promoting proceedings in the form of the Articles of War, 'with reference to the faults or omissions which he may meet with, or informing the President of the Province when the measures which the case may require should not be within his attributions.

ART. 33.—The Officer controlling the Pilotage has the imperative duty of watching that its Employés are zealous and active in the performance of their duties, and he will have the power to punish, for the purpose of correction, with imprisonment not exceeding eight days, or suspension from their employment not exceeding fifteen days, those who may fail to comply with their duties ; and in the event of faults of a more serious description, he will immediately inform the Captain of the Port, that he may order them to be rendered responsible.

ART. 34.—The said Controller of the Pilotage will, in the event of there not being at the Bar a Ship of War for the purpose of the Police of the Anchorage, have the charge of visiting and registering the vessels which may enter or leave ; and he will communicate weekly to the Captain of the Port the vessels which entered or left, with a declaration of the tonnage of each vessel, and the port whence it came ; and also all circumstances referring to the state of the Bar.

ART. 35.—To the aforesaid Controller it belongs to regulate

the details of the service of the Pilots and other Employés, as may be most suitable ; so that, in the event of the Bar being practicable, the entry or exit of the vessels which should require to pass the same should never be delayed, for want of due precautionary measures. Should the weather permit of it, a Pilot-Boat shall be stationed at the entry of the bank from dawn until sun-set.

ART. 36.—The calling signal for vessels to enter shall be made, as hitherto, by means of a scarlet flag hoisted on the large mast of the Watch Tower ; there being, however, simultaneously hoisted on the smaller mast of the said Watch Tower the signal of the depth of water, in palms, of the channel at the Bar upon the occasion, (making the necessary discount for the plunging of the vessel) ; the calling signal having reference exclusively to those vessels whose draught of water should be equal to or less than that indicated on the smaller mast of the Watch Tower, and by the Pilot-Boat which may be on the bank, in conformity with the rules for signals long since adopted, appearing from the Table annexed to this Regulation. (*See Appendix, No. II.*)

ART. 37.—The signals of the palms of water for vessels about to go out shall be made on the side of the anchorage, on a mast, near the Pilotage Wharf, independently from any other signal from the Watch Tower.

ART. 38.—The Pilotage shall correspond with the vessels which may be outside of the Bar, by means of the system of signals appearing in the Table, (*See Appendix, No. IV*) ; affording them the aid and advice which they may need for their security, whilst the state of the Bar should not allow of their proceeding thereto.

ART. 39.—A second or third-class Pilot shall be ordered, "ex officio," on board those vessels which go out without being towed, and the same shall be done outside of the Bar, when the Captain or Master so requests, should the weather and state of the sea allow of its being done. A Pilot shall also be given to those vessels which apply for him, from the Man-

gueira Anchorage to that of São José do Norte, or only to the channel buoy.

ART. 40.—The service of the Pilot in these two last cases shall be separately paid in the following manner. The vessels about to enter which should require a Pilot outside the Bar, will pay the Pilots sixteen milreis, besides a daily payment of two milreis if they should remain on board more than twenty-four hours. Those who request a Pilot from the anchorage at the Bar, or Mangueira, to that of São José do Norte, ought to pay twelve milreis, and requiring him until they cast anchor near the buoy they shall pay ten milreis.

ART. 41.—These payments shall be made in the Custom House in which the vessel may require to be despatched, in the same manner as the payment of which the 10th Article of the present Regulation treats, excepting the daily payments due to Pilots, which shall be paid in the Pilotage Department.

ART. 42.—The Pilots before coming alongside of any vessel outside the Bar should enquire if it carries or not a clean Bill of Health ; should the answer be in the affirmative, they will immediately go on board the vessel, and after being informed by the Captain or Master of its true draught of water, they will order the corresponding signals to be hoisted, if it should not have been already done, managing and working the vessel in a suitable manner ; if, however, the answer should be in the negative, they shall not go alongside, but from the outside they will demand the necessary information, in order to guide the vessel correctly in the entrance ; or they will follow the superior instructions which perchance there may be in the Pilotage, with regard to vessels proceeding from places in which any epidemic disease may be prevalent.

ART. 43.—The Pilots, who go on board vessels in order to give them the required direction, will limit themselves to the performance of their duties, and will not consent that the Captains or Masters should interfere in the service properly belonging to the Pilotage, treating them however always with delicacy of manner ; they being prohibited under penalty of

the loss of their employment to solicit from the Captains or Masters any gratuity, directly or indirectly, or even to accept any present spontaneously offered, unless with the previous consent of the Controller of the Pilotage.

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## CHAPTER VII.

*Of the Obligations imposed on Captains or Masters of Vessels, and of the Penalties to which they are subject for infractions.*

ART. 44.—The Captain or Master of every vessel demanding the Bar of Rio Grande do Sul should hoist on the fore-mast the signal corresponding to the draught of water of his vessel, according to the Table (*See Appendix, No. II*), and should conform with that which is regulated in the observations attached to the same table (*See page 24*). When he may require to communicate with the Pilotage Department he will make the signals recommended in the observations attached to the Table (*See Appendix, No. IV*), and he will take every care to follow the instructions which the Pilotage may give him, conformably to what is combined according to the same Table. (*See Appendix No. IV*).

ART. 45.—In every case, as soon as the Pilot should mount the quarter-deck ladder of the vessel which he has to guide, the Captain or Master thereof shall be obliged to declare to him solemnly the number of palms in Portuguese measure of which the draught of the said vessel consists.

ART. 46.—Every Captain or Master should comply with any requisitions of the Pilot tending to the proper guidance and security of the vessel, and he should also have the kedge anchor, tow rope, anchors, and cables, unincumbered and ready for use.

ART. 47.—No Captain or Shipmaster will be allowed to ill-treat the Pilots, or to fail in attending to their directions, and



when it should happen that these misconduct themselves on board, the Captain or Master ought, immediately after casting anchor, to address a detailed complaint to the Captain of the Port, in order that he may proceed as may be convenient.

ART. 48.—If, from bad weather supervening, or from any other cause, any vessel going out should carry away the Pilot, the Owner shall be liable, at his cost, to cause him to return on the first opportunity which should offer, or to pay all the expenses incurred by the Pilot for transport to the Pilotage establishment, and besides a daily payment of two milreis for the whole period of his absence.

ART. 49.—Every Captain or Shipmaster who, on approaching the Bar, should not hoist the signal of palms of water, and he who, by means of signals, or by verbal information, should attribute to his vessel a different draught of water from that which it really draws, shall be fined in the amount of *one hundred milreis* if the difference should be less, and in that of *fifty milreis* if greater than the reality.

ART. 50.—Should any of the Pilots in service distrust the signals of palms of water which any vessel may have hoisted, believing them not to be exact, he should inform the Controller of the Pilotage, who will order an examination of the truth on board the same vessel; and it being found that in effect there was deceit, proceedings shall be taken in conformity with the provisions of the previous article.

ART. 51.—The Captain or Shipmaster who in going out or coming in should sail to the Bar without signal from the Pilotage; or when requiring in effect more depth of water than the draught corresponding to the signals made by the Pilotage, he shall be fined *two hundred milreis*, unless he should prove in justification, in the Captaincy of the Port, that he was obliged to do so by force of circumstances beyond his control: the vessel, in default of the Captain, remaining subject to the payment of the fine, in the event of the hull being saved.

## CHAPTER VIII.

*General Regulations.*

ART. 52.—It belongs to the Captain of the Port to decide in a summary manner, conformably to the appropriate Regulation, the questions which may arise in the Pilotage of the Bar, either between the Captains or Shipmasters, the Controlling Officer, and the Pilots, or against any of these, with regard to their negligence, incapacity, carelessness, or other cause, which may weaken the regular march of the service. The said Captain of the Port ought to proceed with diligence in the necessary investigations, to decide with justice, or bring the affair if necessary to the knowledge of the President of the Province.

ART. 53.—The registrations last mentioned in the 12th Article ought to be signed not only by the Controller, the Secretary of the Pilotage, and the Pilots in service, but also by the Captains or Masters\* respectively, when they may be acquainted with the Portuguese language, or there may be an interpreter for the language which they speak ; and authentic copies shall be transmitted to the Captaincy of the Port.

ART. 54.—The Employés of the Pilotage shall be exempted from the service of the National Guard, and from any other public service which may require absence for more than twenty-four hours from the Bar.

ART. 55.—The Pilots of all classes shall wear a blue cloth cap, blue or white trousers, and a coat or uniform dress similar to those of Officers of the Navy, having a sounding lead on each side of the collar, with the difference that the first and second-class Pilots will have it embroidered with gold wire, and those of the third-class with silver wire ; and that the collar of the coat or uniform dress of the first-class Pilots should be edged with gold lace of half-an-inch in width.

ART. 56.—All the official correspondence of the Pilotage Department with the superior Authorities shall take place

\* British Shipmasters are advised first to consult their Consul.

through the medium of the Captaincy of the Port, and the Controller will not be allowed to address directly the Authorities referred to, excepting in cases of emergency ; in which event he should transmit to the said Captaincy, for its information, copies of the despatches thus forwarded.

ART. 57.—The Police Authorities of the district to which the establishment of the Bar Pilotage belongs shall not interfere with what refers to the individuals included therein, unless by means of application to the Captain of the Port, or, in urgent cases, to the Controlling Officer.

ART. 58.—The system of Signals of the Table (*Appendix No. IV*) will only have effect eight months after the publication of the present Regulation.

PALACE OF RIO DE JANEIRO,  
16th November, 1857.

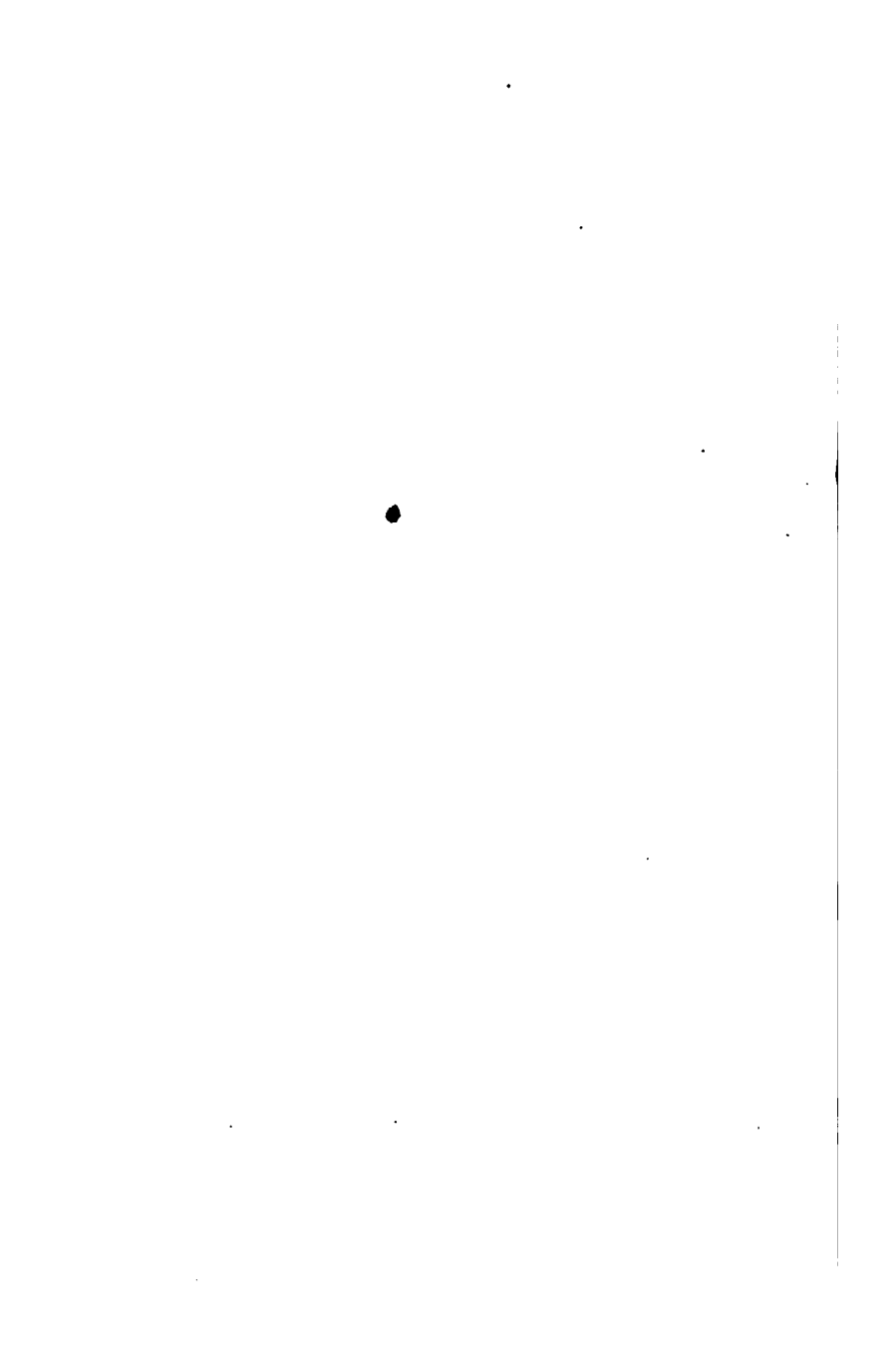
(Signed)      JOSÉ ANTONIO SARAIVA.

## APPENDIX NO. IV.

**SYSTEM** of Telegraphic Signals which are made on the yard of the large mast of the watch tower at the bar of Rio Grande do Sul, for communication between the pilotage and the vessels outside the said bar, whether about to enter or not.

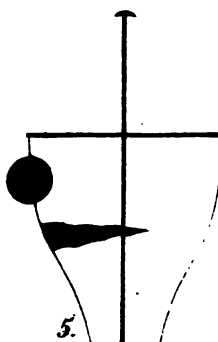
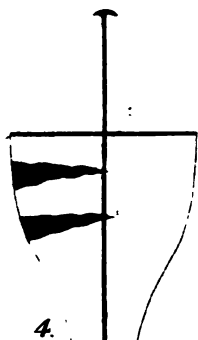
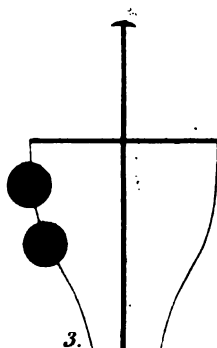
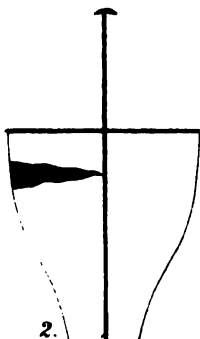
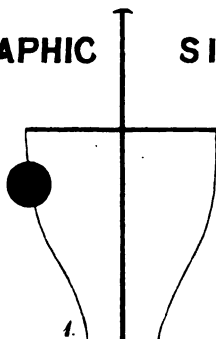
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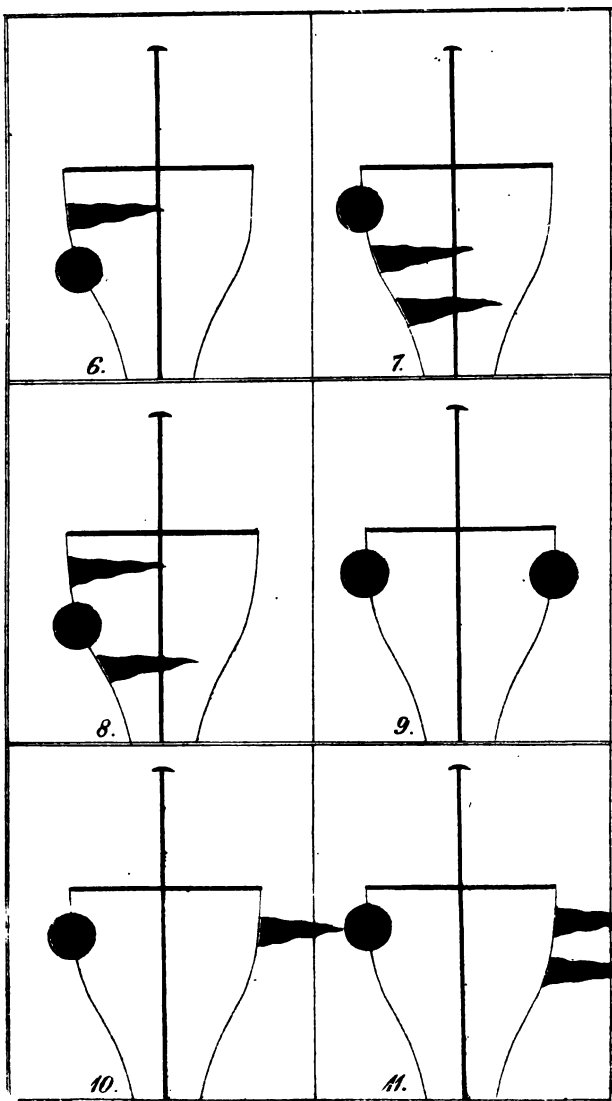
**N.B.**—These Signals shall be acknowledged by each vessel, by lowering twice following its national or distinguishing flag.

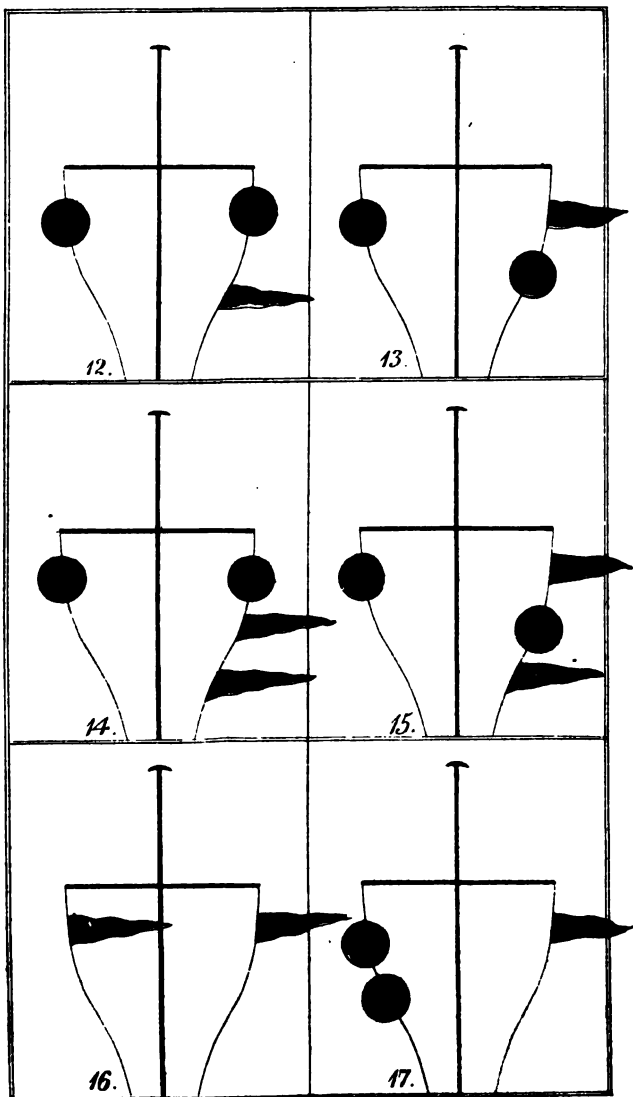


TELEGRAPHIC

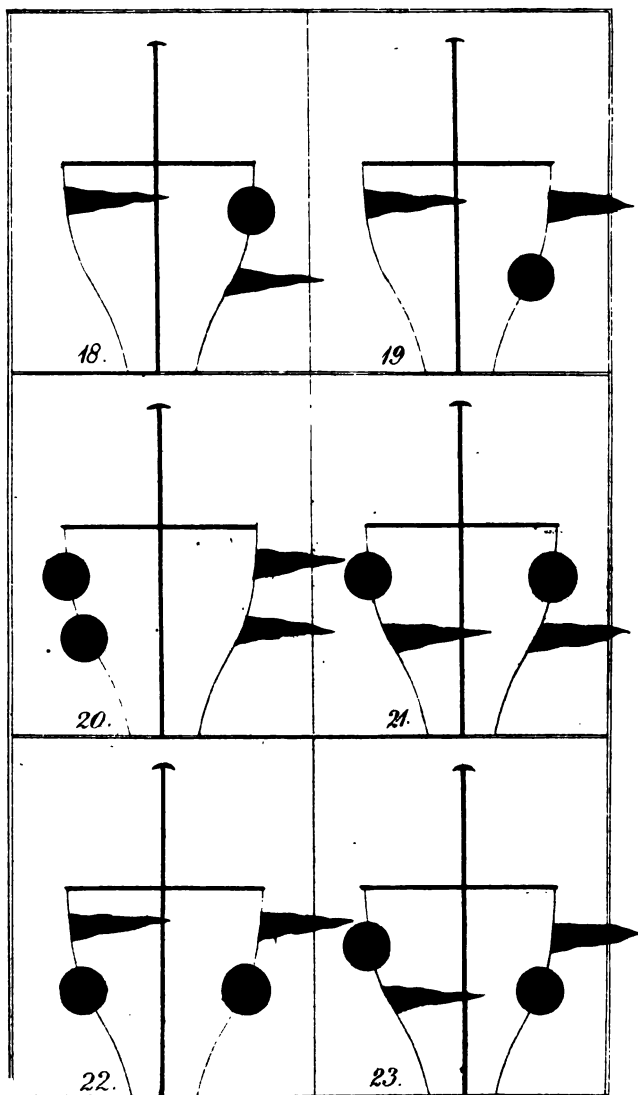
SIGNALS.









**EXPLANATION**

## EXPLANATION OF SIGNALS.

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No. 1.—Keep with an open roadstead to the bar.

No. 2.—Luff (or work the vessel suitably), as you are to leeward of the bar.

No. 3.—Try to go to leeward, as you are too much to windward.

No. 4.—Put out more to sea, as you are too near the coast.

No. 5.—Put out more to sea, as you are near the shoals.

No. 6.—Put out more to sea, as wind threatens from the south-eastward.

No. 7.—Look out ! on this tack you get aground.

No. 8.—Cast anchor to the north of the bar, at a sufficient distance from the shore.

No. 9.—Cast anchor at the South of the bar, in six to eight fathoms water.

No. 10.—Put on a press of canvas to be enabled to enter.

No. 11.—The calling signal is for those vessels only whose draught of water is equal to the palms of water indicated by the watch tower.

No. 12.—It is not possible to enter now, as the state of the bar does not permit of it.

No. 13.—You can only enter at present under towage.

No. 14.—You cannot enter at present, as the wind is light, and there is a strong current.

No. 15.—The assistance you request is being prepared.

No. 16.—Approach the bar, as the pilot boat is on the bank (or the steamer is about to proceed outwards).

No. 17.—Navigate so as to approach the boat which is about to go out with the succour you have requested.

No. 18.—Let the vessel which requires a pilot navigate towards the boat which is about to bring him.

No. 19.—Observe attentively the signals of the watch tower as the pilot boat cannot go to the bank.

No. 20.—As soon as darkness comes on, be guided by the lights of the pilot boats which are on the bank.

No. 21.—There is not at present a tug steamer at the bar.

No. 22.—The tug steamer cannot go out at present.

No. 23.—Deliver to the steamer (or to the pilot boat) the mails, correspondence, or notices, which you may bring.

N.B.—All these signals are made with blue balls (balloons) and blue pennants.

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## OBSERVATIONS.

WHEN various vessels arrive outside the bar with different draughts of water, the captains or masters should approach until they can clearly distinguish the signals of depth of water hoisted on the watch tower, or on the pilot boat, which may be on the bank, in order that each may know whether the calling signal has reference to him or not ; and, in the event of its not referring to them, they ought immediately to endeavour to tack about to sea, and go away from the bar, but with constant attention to the signals which the pilotage may make to them, according to the present telegraphic system.

The pilot boat already mentioned, which is stationed on the bank, as well as that which should be at anchor in the inner bay, will guide the vessels coming in or going out, by means of a red moveable flag, the which when inclined to the north or to the south indicates that the vessel ought to navigate to that side ; and when placed perpendicularly, that it ought to follow the same pilot boat in a straight line.

When any vessel should require assistance, the flag of its nation shall be hoisted half-mast high. If the succour it requires is of provisions, it will exhibit its distinguishing flag on the same mast and below its national flag. If it should require water only, the same distinguishing flag shall be hoisted on the same mast above its national flag. If it should require any anchor or cable, the distinguishing flag above-mentioned should be hoisted on the mizen-peak.

When any vessel requires to be towed the flag of its nation shall be hoisted on the foremast above the signals of draught of water.

To request a pilot, the signals of the palms of water shall be hoisted above the flag of its nation.

The vessels which may approach at night the bar of Rio Grande should exercise every vigilance to discover the light, which is placed on an iron tower ninety-nine British feet in height as compared with the ocean level, and which is visible at the distance of from twenty-two to twenty-five knots (*maritime miles*), the light being white, revolving, and eclipsing every minute.

## APPENDIX No. V

**SOUNDINGS on the Bar of Rio Grande do Sul, and prevailing Winds, from Returns of Pilotage Department in 1857 and 1859.**

N.B.—When no Soundings are mentioned it may be presumed that none were taken; either in consequence of there being no Vessels about to enter or depart, or from the manifest shallowness or roughness of the water on the Bar.

Date.	1857.			1859.		
	Soundings in palms.		Prevailing Winds.	Soundings in palms.		Prevailing Winds.
	Highest.	Lowest.		Highest.	Lowest.	
Jan. 1	12	10	..	13	..	N, NE
" 2	..	..	..	..	..	..
" 3	15 $\frac{1}{2}$	13	..	..	..	..
" 4	16	..	ESE	16	..	SE
" 5	..	..	..	14 $\frac{1}{2}$	..	S, SE
" 6	..	..	..	..	..	..
" 7	17	13	E, SE	16 $\frac{1}{2}$	..	SW
" 8	..	..	..	14	..	..
" 9	17	..	..	17	14	NE
" 10	..	..	..	..	..	S, SSE
" 11	12 $\frac{1}{2}$	..	SSW	16	..	SW, S, SSE
" 12	15	..	E	15 $\frac{1}{2}$	13	NE
" 13	14 $\frac{1}{2}$	13 $\frac{1}{2}$	S, SSE, WSW	15 $\frac{1}{2}$	14	NE
" 14	..	..	..	16	..	ESE
" 15	14 $\frac{1}{2}$	..	ENE	17	..	SSW
" 16	13 $\frac{1}{2}$	..	NNE	..	..	..
" 17	..	..	..	15 $\frac{1}{2}$	14	SE
" 18	..	..	..	..	..	SW
" 19	..	..	E, SSW	16	14	SW
" 20	13 $\frac{1}{2}$	13	NE	18	..	NW, SE, S
" 21	12	11 $\frac{1}{2}$	NE	18	15	E
" 22	13 $\frac{1}{2}$	12	Variable	15	..	SW

Date.	1857.			1859.		
	Soundings in palms.		Prevailing Winds.	Soundings in palms.		Prevailing Winds.
	Highest.	Lowest.		Highest.	Lowest.	
Jan. 23	14½	12	N	18	15	E, ENE
" 24	16	..	W S W, S W	15	13	SE
" 25	13	..	S	16	..	ENE
" 26	..	..	..	16½	14	NE
" 27	..	..	..	..	..	SE
" 28	16½	..	S	..	..	SE
" 29	16	15	S, S W	..	..	E
" 30	14½	..	S W, SE	..	..	SE
" 31	16	13½	E, ESE	16½	15	S W, SE
Feb. 1	..	..	..	17	15	SE, S, ESE
" 2	17	..	W, W N W	13½	..	ESE
" 3	16	..	S	13½	..	NE, ENE
" 4	13½	..	NNE	15	13	NE
" 5	..	..	ESE ..	..	..	SE, ESE
" 6	15	12	ESE	..	..	SSE, SE
" 7	13½	12	Variable	..	..	SE
" 8	14	..	Variable	16½	14	S W, ENE
" 9	16	14½	S	15½	..	S
" 10	13	..	S, S W	16	14	..
" 11	..	..	..	13	..	..
" 12	13½	..	W S W, S	14½	..	..
" 13	13½	..	N W	15	14½	NE
" 14	14	..	Variable	16½	14½	..
" 15	15	14½	S, S SE	17	..	SSE, E
" 16	..	..	..	17	14	..
" 17	..	..	NE	17	..	N W, N N W
" 18	12½	11	Variable	17	13½	NE
" 19	14	..	SE, SSE	17½	14	NE
" 20	13½	..	E, ESE	15½	14½	ENE
" 21	13	12	E	18	..	N W, SSE
" 22	15½	..	E	15½	..	N W, W
" 23	..	..	ENE	16	14	ESE, ENE
" 24	15½	12	N, N N W	18	16	SSE, SE
" 25	15	13	N W, W N W	16	14	E, ESE
" 26	16	14	S	15½	13	N W

Date.	1857.			1859.		
	Soundings in palms.		Prevailing Winds.	Soundings in palms.		Prevailing Winds.
	Highest.	Lowest.		Highest.	Lowest.	
Feb. 27	..	..	..	15	..	SSE, ESE
" 28	14	..	SSE	17	14	N. NNE, NW
Mar. 1	15½	13	S, SSW, SSE	17	..	SW, WSW
" 2	14½	12	SSE	..	..	WSW
" 3	14½	13	E, SE, S	..	..	SW, SE
" 4	12½	..	SE	15	..	SSE
" 5	..	..	..	17	14	E, ENE
" 6	..	..	..	16	14	NE
" 7	..	..	..	17	14	E
" 8	..	..	..	..	..	E
" 9	14	13	S	15½	14	NE
" 10	15	13	SSE, ESE	14	13	NNE
" 11	..	..	..	15	..	E
" 12	..	..	..	16½	..	ENE
" 13	..	..	..	16	13	NE
" 14	14½	13	WSW, SW, SSW	17	..	SE, NE
" 15	..	..	..	16½	..	SW, SE, E
" 16	..	..	..	18½	..	ESE
" 17	..	..	..	16	14	NE
" 18	..	..	..	14	..	NE
" 19	12½	..	W	16	..	E
" 20	14	..	E, ESE	..	..	E, ESE
" 21	..	..	..	..	..	ESE
" 22	..	..	..	..	..	E
" 23	..	..	..	13½	..	NE
" 24	..	..	..	13½	..	ENE
" 25	..	..	E	..	..	NW, SE
" 26	13	..	WSW	17	14	SW
" 27	..	..	..	17	..	SW
" 28	15	13	S, SSE	14½	..	S
" 29	15½	13½	SSE, ESE	..	..	WSW, S
" 30	16½	14½	S, SE	14½	13½	ESE, SW
" 31	17	14	WSW, SSW, S	13½	..	ESE
Apr. 1	..	..	..	15	..	ESE
" 2	..	..	W	13½	..	ENE

Date.	1857.			1859.		
	Soundings in palms.		Prevailing Winds.	Soundings in palms.		Prevailing Winds.
	Highest.	Lowest.		Highest.	Lowest.	
Apr. 3	..	..	{ Violent Storms, W, S, SE	14½	13½	NE
" 4	..	..	Do. do.	15½	14	SW, SE
" 5	..	..	Do. do.	15½	..	E
" 6	..	..	Do. do.	16½	14	Variable
" 7	..	..	..	..	..	S, SSE
" 8	..	..	E ..	13½	..	E
" 9	12½	..	SE	..	..	NE
" 10	..	..	..	..	..	NNW
" 11	12	..	E ..	..	..	SW
" 12	13	..	SE	16½	..	W, SSW
" 13	12½	..	ESE	15½	..	S
" 14	..	..	ENE	..	..	..
" 15	..	..	..	..	..	NE
" 16	..	..	E, ENE	..	..	NE
" 17	..	..	E	..	..	SE, E
" 18	..	..	E	..	..	Variable
" 19	..	..	E, ENE	15	..	E, SE, ENE
" 20	..	..	NE	15	..	E, ENE
" 21	12	..	N, NNE, NNW	18	15	NW, WNW
" 22	..	..	SSW, SW	17	..	WNW, WSW
" 23	..	..	..	15	..	SE
" 24	..	..	W, WSW	16	..	Variable
" 25	..	..	..	15	13	NE
" 26	..	..	..	15½	..	NNW
" 27	16½	16	Calm	16	14	Variable
" 28	..	..	..	17	15	SSW, SSE
" 29	..	..	..	15½	14	SE
" 30	11	..	E	15½	..	E
May 1	15	13	..	16	14	NNE
" 3	15½	15	SW, WSW	..	..	NE
" 7	15	14	..	..	..	NE
" 8	15	14	WSW	..	..	W
" 9	13	..	W	..	..	..
" 10	..	..	NW, WNW	..	..	NW, WNW



Date.	1857.			1859.		
	Soundings in palms.		Prevailing Winds.	Soundings in palms.		Prevailing Winds.
	Highest.	Lowest.		Highest.	Lowest.	
May 17	17	15	W	17	..	N, S
" 18	15 $\frac{1}{2}$	..	W N W	..	..	W S W
" 21	14 $\frac{1}{2}$	13	..	..	..	
" 22	15 $\frac{1}{2}$	14	E	..	..	
" 24	16	15	N N W	14	13 $\frac{1}{2}$	E N E
" 25	14 $\frac{1}{2}$	..	E	..	..	Thick Fog
" 27	16 $\frac{1}{2}$	13	W	14 $\frac{1}{2}$	..	N
" 30	15 $\frac{1}{2}$	..	W N W	..	..	S E, N E
" 31	15 $\frac{1}{2}$	..	W S W	..	..	
June 1	15 $\frac{1}{2}$	..	..	17	..	W
" 8	12 $\frac{1}{2}$	..	..	..	..	
" 6	14 $\frac{1}{2}$	..	N E	17	..	Variable
" 7	12	..	N	17	14	W
" 8	14	..	E N E	17	..	W, N
" 13	16	..	S S E	17	..	Variable
" 21	12 $\frac{1}{2}$	..	N N E, N E	..	..	N E
" 24	12	..	N N E, N E	16	..	N N E
" 25	..	..	..	17	..	N W, S W
" 26	..	..	..	16	..	S, S S W
" 30	..	..	..	15	..	S E

## APPENDIX No. VI.

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### ABSTRACT OF REGULATION OF THE PORTS OF BRAZIL.

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#### TITLE I.—ONLY CHAPTER.

ARTICLES 1 to 8.—Refers to Officers of Captaincy of Port.

#### TITLE II.—CHAPTER I.

ARTICLES 9 to 16.—Refers to duties of Captain of Port, and to maintenance of proper regularity on the shores of the port.

#### TITLE II.—CHAPTER II.

ART. 17.—Every Shipmaster is entitled to a copy of this Regulation when entering the Port, and shall return it when leaving.

ART. 18.—Shipmasters, immediately after the vessel has been visited, shall make entry in the Captaincy of the Port, stating name of Master, and of vessel, port to which belonging, number of crew, whence coming, national character, tonnage, passengers, and quantity and quality of ballast.

ART. 19.—Shipmasters about to depart shall clear at the Captaincy of the Port, and receive from that department a clearance paper. Penalty for non-compliance *four milreis*, besides detention till this is done. No charge for entry or clearance at Captaincy of the Port.

ART. 20.—No national or foreign vessel is allowed to sail from the port after sunset or before sunrise.

#### TITLE II.—CHAPTER III.

ARTS. 21 to 23.—Captain of Port shall propose anchorage stations.

ART. 24.—Powder to be discharged at Franquia station, and placed in deposit. Master to petition accordingly.

ART. 25.—Boats carrying powder to be covered with tarpaulin, with a red flag hoisted, and to be accompanied by Custom House Officer.

ART. 26.—All vessels in loading or unloading stations, must have their jibs and flying jib-booms rigged in. Penalty for each neglect, four milreis and loss of right to indemnification in case of damage.

ART. 27. All anchors must be moored in customary direction. Shipmasters not doing so to be fined six milreis, and obliged to remove anchor.

ART. 28.—All anchors to be buoyed, rope fastenings not being allowed. Penalty, to pay any damage caused, and a fine of six milreis.

ART. 29.—All and every vessel shall afford in the different anchorage stations reciprocal aid in the act of mooring and unmooring, such as allowing ropes to be fastened, and veering cable in case of any unforeseen accident, &c.

ART. 30.—No guns to be fired from vessels. Penalty, eight milreis, besides paying damage inflicted.

ART. 31.—No fire or light allowed on board after sunset, excepting two close lanterns. Penalty, ten milreis, and to pay damage occasioned by default.

ART. 32.—No vessel to sail overloaded, or with cargo on deck which may occasion danger.

ART. 33.—No merchant vessel is allowed to send a boat to another vessel about to enter or go outwards, excepting to tow such vessel, or assist it to moor, and with the condition that they cannot go to the gangway, but may remain fastened astern when not required.

ART. 34.—Boats of Merchant Vessels in loading and unloading stations to be fastened at gangways. Penalty, four milreis.

ART. 35.—No Merchant vessel to have boat out after sunset gun. Penalty four milreis.

ART. 36.—Refers to Lighters, &c.

ART. 37.—Boats of authorities to seize Boats of Merchant Vessels and others found in anchoring stations after sunset, and to fine owner ten milreis.

ART. 38.—Anchors not to be dragged for in anchoring stations without licence.

ART. 39.—No person to appear naked, or indecently dressed, in the anchoring stations during the day. Penalty, three days' imprisonment.

#### TITLE II.—CHAPTER IV.

ARTS. 40 to 44.—Treats of anchorage stations for old vessels and others under repair, without destination. If vessel sinks through negligence of Master, he must raise it, or Captain of Port will do so at his expense and profit. Captain of the port will fix on place for breaking up of vessel when owner so desires, and will appoint period within which work of breaking up is to be completed.

#### TITLE II.—CHAPTER V.

ART. 45.—When a vessel should take fire all those near should immediately separate from her, and afford all assistance in their power. Should the vessel that first discovers the fire have powder on board it will signal with two guns at an interval of half a minute, and in any case will hoist a large lantern at the gaff top, covering it with red bunting.

ART. 46.—In case of fire Captain of the Port to take measures.

ART. 47.—All three-masted vessels must have on board eight canvas, wood, or leather buckets, with their ropes, and two hatchets, always ready; two-masted vessels to have half the number. Penalty, for default in either case, four milreis.

ARTS. 48 to 50.—Provide for proceedings of Officers in Port in case of fire or other danger to vessels.

## TITLE II.—CHAPTER VI.

ART. 51.—Shipmasters not to discharge or load ballast without license of Captain of the Port, who will determine the place whence it must be taken, or where it shall be thrown.

ART. 52.—“It is not allowed to take in or unload ballast during the night, nor to heave it overboard in the anchoring station, nor any sweepings out of the hold when cleared out : the delinquent in the first case (*cases*) shall be subject to a fine of fifty milreis, and in the second case, besides the fine of from one hundred milreis to one conto of reis, shall be imprisoned from one to thirty days, according to the nature of the case.”

ART. 53.—Vessels, according to license, may tranship ballast from one to another.

ART. 54.—Of Coasting Vessels.

## TITLE III.—ONLY CHAPTER.

ARTS. 55 to 58.—Treats of the Inspection and Administration of Lighthouses, Vessels of Relief, Beacons, Buoys, and Vessels for Excavation.

## TITLE IV.—CHAPTER I.

ARTS. 59 to 62.—Treats of Matriculation of Brazilian crews.

ART. 63.—No Shipmaster shall admit any Brazilian in his crew without a certificate from the Captain of the Port, showing he is disengaged, nor shall he engage any foreigner without a similar certificate from the Consul of the nation to which such foreigner may belong.

## TITLE IV.—CHAPTER II.

ARTS. 64 to 69.—Treats of the matriculation of seafaring persons.

## TITLE IV.—CHAPTER III.

ARTS. 70 to 72.—Treats of the Registration of Brazilian vessels.

## TITLE IV.—CHAPTER IV.

ARTS. 73 to 85.—Treats of the internal navigation and traffic.

## TITLE IV.—CHAPTER V.

ARTS. 86 to 90.—Treats of Fishermen.

## TITLE IV.—CHAPTER VI.

ARTS. 91, 92, and 93.—Treats of Pilotage. These articles have been modified by subsequent legislation.

## TITLE V.—CHAPTER I.

ART. 94.—“When two vessels are beating to windward, in or out of the Port, although within the points, the one going on the larboard tack shall have the preference in contrary tacks. If, under such circumstances, the other receive damage, or be the cause of it, she shall not only have no right to indemnity, but shall be obliged to pay the damage she may cause. If, however, the vessel shall be national, or of war, she shall always have the preference.”

ART. 95.—“When two vessels are beating to windward on contrary tacks, close in with the coast, shoal, or any other danger, the one coming in the outward tack shall not be obliged to change her course. Any damage she shall suffer on account of having altered her course with a view of avoiding any shock with another, or even if it has taken place, she shall be indemnified by the other vessel.”

ART. 96.—“Whenever two vessels meet on the coast, one opposite to the other, one hove to and the other sailing, if the former be run foul by the latter she is bound to repair the damage.” Captain of Port to try the case.

ART. 97.—“When two vessels are coming into a Port of dangerous entrance, the vessel most distant must wait until the one nearer enters first. If the former, owing to her being a faster sailer, should come and meet the other, and thereby run foul, she shall be obliged to pay the damage.”

ART. 98.—“In the same manner, when departing, the vessel most astern must wait until the one close to the bar shall have got out.”

ART. 99.—“All vessels, either coming in or going out of a port, must leave the way free to any other going out or coming in with a foul wind.”

ART. 100.—“All vessels hauling up by a rope, or which at the time of getting under weigh or sailing, shall cause any damage to another vessel at anchor, either to her hull, rigging, or moorings, or to her cargo, shall be obliged to indemnify the same.”

#### TITLE V.—CHAPTER II.

ART. 101.—“When a vessel finds herself in shoal water, and unable to get off, the Captain or Master shall have a right in case of danger to demand that the vessel close to her weigh or trip her anchor to clear her way, whenever the vessel at anchor be in circumstances to do so without danger to herself, but the former shall indemnify the latter for any damage that she may have sustained to save her from danger.”

ART. 102.—“Whenever any vessel sailing shall come near to another at anchor, the latter shall immediately haul up her launch or boat astern. In case of not doing so she will not only lose her right to indemnification in case of any damage, but on the contrary will be obliged to pay any injury that, on that account, the vessel under weigh may sustain.”

ART. 103.—All vessels to be responsible for damage caused by want of buoys to their anchors.

ART. 104.—All vessels badly placed or moored to be responsible for damage caused in consequence.

#### TITLE V.—CHAPTER III.

ART. 105.—“Whenever a vessel shall drag upon another on account of a storm or extraordinary force of the tide, in case of its being owing to negligence, or that her anchors be not proportional to the size of the vessel, she shall be obliged to repair the damage.”

ART. 106.—“If a vessel under the same circumstances of a storm run foul of another, owing to a third vessel having impelled her to it, the latter shall be obliged to repair the damage in case that the same causes exist as mentioned in the preceding article.”

ART. 107.—“If, however, the cases of the two preceding articles take place after the vessel has let go all her anchors, but that notwithstanding this either the vessel drags or loses any anchor, in such case there will be no right to repair the damage. There may be, however, circumstances in which the same damage be divided between the two.”

ART. 108.—“Whenever any vessel in the act of mooring or unmooring shall run foul of another, owing to a third vessel refusing to afford the reciprocal aid to which all vessels are obliged in the anchoring stations, she shall not be obliged to repair the damage, but it shall be done by that which has refused the aid.

ART. 109.—Questions with regard to damage by collision, &c., to be decided in a summary manner by Captain of Port, and without appeal, when value does not exceed one hundred milreis.

ART. 110.—In cases exceeding one hundred milreis, appeal to lie to Brazilian Naval Court.

#### TITLE VI.—ONLY CHAPTER.

ART. 111.—Treats of building Brazilian vessels.

ART. 112.—Treats of Signals for Brazilian vessels for each Province.

ART. 113.—Treats of disposal of fines.

ART. 114.—Fine of two to four milreis may be levied for each contravention of Regulation, when a specific fine is not mentioned.

ART. 115.—Regulation to be translated in English and French.

#### TITLE VII.—ONLY CHAPTER.

ARTS. 116 to 127 (end).—Treats of forms of procedure under this regulation, and emoluments of Captaincy of the Port.



## APPENDIX No. VII.

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### AGREEMENT BETWEEN MERCHANTS.

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IN consequence of the disputes constantly arising between Foreign Shipmasters and their consignees, owing to the want of established rules whereby to regulate the settlement of accounts, it is resolved by the resident foreign merchants that the following regulations shall henceforward be adopted and adhered to, under the denomination of the Custom of the Port of Rio Grande do Sul :—

1st.—That the consignees of vessels shall have the privilege of choosing at which Custom House entry shall be given.

2nd.—That the vessel shall bear the expense of all lighterage attendant upon entry at the South Custom House, unless there be a special clause in the Charter-party or Bills of Lading to the contrary.

3rd.—That upon entry being given to discharge at the South Custom House, and it be found necessary to lighten the vessel at the north, she shall, after being sufficiently lightened, be brought over to the South, if required.

4th.—That the consignees alone shall be entitled to commission accruing from the consignment of the vessel.

5th.—That when a homeward charter is required for the vessel the consignees shall have a prior right of chartering at current rates, and in any case the charter shall be effected through their agency.

6th.—That the commission for recovering outward freight shall be five per cent. on the amount payable abroad, or when the entire freight is so payable two-and-a-half per cent.; and that whether the vessel be chartered at home or abroad for the return voyage, the consignees shall be entitled to a commission which shall in the former case be two-and-a-half per cent., and in the latter five per cent., on the amount of freight.

7th.—That the charterers shall have the privilege of sending their own stevedore on board, and that the vessel shall bear the expense of stowing the cargo.

8th.—That the charge for Custom-House agency shall be Rs. 32 ₹ 1000, and that a commission of five per cent. shall be paid by the vessel on the amount of her disbursements, unless such a charge be specially provided against by the charter-party.

9th.—That outward freight, payable abroad, shall be recovered on delivery of the cargo at the current rate of exchange for Bills on London, at the customary usance of 90 days, which rate shall be that established by the latest transactions.

10th.—That on the adjustment of freight on salt twenty-eight alqueires shall be calculated to the ton.

11th.—That a committee of three of the undersigned shall decide in any cases that may be considered exceptional to these regulations.

12th.—The undersigned bind themselves to a strict adherence to all the foregoing rules.

*Rio Grande, 13th November, 1854.*

*[Here follow signatures of nine firms, of which four may now (1859) be considered to have merged in other firms, one to be dissolved, and one to have retired.]*

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## APPENDIX No. VIII.

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TABLE of prices of towage at Rio Grande do Sul according to a contract entered into by the Brazilian Government with John Tarrant Thomas ; the contractor to possess the exclusive right of towage for four years from the 10th March, 1846.

PRICES PER TON.*						REIS.
1.	From the south to the Canal da Barca, and vice versa					400
2.	From the south to the north, or vice versa ....	....				600
3.	From the south, Canal da Barca, and north, to the bar, or vice versa ....	....	....	....	....	600
4.	From the bar outwards ....	....	....	....	....	640
5.	From any distance outside the bar not exceeding two miles to inside ....	....	....	....	....	800
6.	From any distance outside the bar not exceeding two miles to the south, Canal da Barca, and north					1,200
7.	From outside the bar at the distance of two to four miles ( <i>to inside</i> ) ....	....	....	....	....	1,000
8.	From outside the bar at the distance of two to four miles to the south, Canal da Barca, and north ....					1,400
9.	From outside the bar at the distance of four to six miles ( <i>to inside</i> ) ....	....	....	....	....	1,200
10.	From outside the bar at the distance of four to six miles to the south, Canal da Barca, and north ....					1,500

\* The tons intended are Brazilian tons, which, according to the measurements are often calculated to exceed the British register tonnage by one third.

## OBSERVATIONS.

1st.—The vessel which, being in danger in consequence of stranding, striking, or leaking, when going out or coming in over the bar, is assisted and saved by the steamer, shall pay *five per centum* on the value of the vessel, freight, and cargo, saved; if, however, five per centum should not give the amount stipulated in the 2nd Observation, the consignee will be obliged to pay John Tarrant Thomas the difference.

2nd.—If the steamer should go to assist a vessel in the circumstances above specified, and all efforts should be unavailing, the consignee shall pay *fifty milreis* for each hour of service in the place of danger.

3rd.—The vessel which, going out or coming in under sail, should, from finding itself in a dangerous position in consequence of the wind failing, or other similar motive, call for the steamer and be thereby assisted, shall pay fifty per centum additional upon the respective towage.

4th.—The vessels under 100 tons shall pay for 100, and those above 250 shall pay for 250.

5th.—The vessels requiring towage should hoist their national ensign above the signals of draught, and those which request succor should hoist it half-mast high.

6th.—The vessels which, after hoisting the signal calling for towage, should not avail themselves of it, shall be obliged to pay the entire towage in the event of their refusing, after the tow steamer has got under weigh with the manifest intention of attending to the call.

7th.—Those who, after hoisting the signal calling for succor, should refuse it, shall be obliged to pay the respective towage if the refusal should be given after the tow steamer has got under weigh with the manifest intention of attending to the call.

8th.—The vessels which take towage from the south, Canal da Barca, or north, to outside the bar, shall pay 1 mil. 200 réis, even though they should go out under sail; also the tug steamer has only right to demand that price when the vessel cannot go out on the same day.

*Rio de Janeiro, 8th October, 1859.*





